R.S.

QK
3
B88
v.2

CORNELL
UNIVERSITY
LIBRARY

FROM

Date Due

OCT 1 5 1949 U
NOV 2 7 1950
~~AUG 2 8 1959 H P~~
~~NOV 2 4 1959 C W~~
~~MAR 1 8 1964 M P~~
~~JUL 1 5 1964~~ M P
OCT 2 9 1964 M P

Cornell University Library
QK 3.B88
v.2
Miscellaneous botanical works of Robert
3 1924 024 547 964 olin

Cornell University Library

The original of this book is in
the Cornell University Library.

There are no known copyright restrictions in
the United States on the use of the text.

http://www.archive.org/details/cu31924024547964

THE

RAY SOCIETY.

INSTITUTED MDCCCXLIV.

This volume is issued to the Subscribers to the Ray Society *for the Year* 1867.

LONDON:

MDCCCLXVII.

THE

MISCELLANEOUS

BOTANICAL WORKS

OF

ROBERT BROWN, ESQ., D.C.L., F.R.S.,

FOREIGN ASSOCIATE OF THE ACADEMY OF SCIENCES OF THE
INSTITUTE OF FRANCE, ETC., ETC., ETC.

VOL. II.

CONTAINING

III. SYSTEMATIC MEMOIRS.

AND

IV. CONTRIBUTIONS TO SYSTEMATIC WORKS.

LONDON:
PUBLISHED FOR THE RAY SOCIETY BY
ROBERT HARDWICKE, 192, PICCADILLY.

MDCCCLXVII.

PRINTED BY J. E. ADLARD,
BARTHOLOMEW CLOSE.

PREFACE TO THE SECOND VOLUME.

(BY THE EDITOR.)

THE present volume contains, as announced in the Preface to the first, the Systematic Memoirs and Miscellaneous Descriptions of Plants; and to these have been added a number of short contributions to different publications, together with notices of the assistance acknowledged to have been afforded by the Author to various writers, wherever the nature of the assistance is distinctly pointed out.

In Pritzel's 'Thesaurus Literaturæ Botanicæ,' p. 35, at the end of the enumeration of Mr. Brown's works, it is stated, "Robertus Brown dedit præterea descriptiones ultimi (an etiam tertii?) Fasciculi Plantarum Cryptogamicarum Dicksonianarum, necnon eas tertii voluminis Plant. Coromand. Roxburghii, et curavit Editionem alteram Horti Kewensis a classe XII ad XXIV." To all the works here mentioned there is no doubt that Mr. Brown contributed valuable assistance, but of different kinds and in different degrees. The fourth fasciculus of Dickson's 'Plantæ Cryptogamicæ,' but not, I believe, the third, was largely indebted to him; but it would be difficult, if not impossible, to determine what portions of the text were actually furnished by him. To the publication of the third volume of Roxburgh's 'Coromandel Plants' he gave a general superintendence, but in dealing with the text confined himself to slight verbal corrections. One generic name, that of *Gynocardia,* was substituted by him for the barbarous name, *Chaulmoogra,* adopted by Roxburgh, and this alteration has met with general acquiescence. On the portion of the second edition of the 'Hortus Kewensis' printed after the death of Dryander, in 1810, he bestowed the same attention which had been devoted by Dryander to the earlier portion, and by Solander to the first edition, adding largely to the elucidation of certain Families and Genera. These contributions will be found extracted in the present volume.

In the list of Mr. Brown's works given by Pritzel there occur two: "No. 1365†, Of three species of the natural order Orchideæ, Lond. 1817, 4, 8 pp. 2 tab. col.;" and No. 1366†, Select Orchideæ, ib. 4, 2 pp." both extracted from 'The Journal of Science and the Arts,' which do not properly belong to Mr. Brown, but formed part of a series of papers on Cape *Orchideæ,* by Mr. Bellenden Ker. These, of course, have not been admitted into the present edition.

I have only, in addition, to return my best thanks to my friends, Mr. Carruthers, and the Rev. W. W. Newbould, for much valuable assistance in reading and comparing the proof-sheets; and to Mr. Carruthers, in particular, for the preparation of the elaborate Index of Names of Plants appended to the present volume.

JOHN J. BENNETT.

NOVEMBER 30TH, 1867.

CONTENTS.

PART III.

SYSTEMATIC MEMOIRS.

PAGE

On the Natural Order of Plants called Proteaceæ . . 3—192

On the Asclepiadeæ, a Natural Order of Plants separated from the Apocineæ of Jussieu . . . . . . 193—247

On Woodsia, a New Genus of Ferns . . . 249—255

Observations on the Natural Family of Plants called Compositæ . 257—318

Characters and Descriptions of Three New Species of Plants, found in China by Clarke Abel, Esq. . . . . 319—328

Characters and Description of Lyellia, a New Genus of Mosses, with Observations on the Section of the Order to which it belongs; and some Remarks on Leptostomum and Buxbaumia . . 329—351

Remarks on the Structure and Affinities of Cephalotus . . 353—359

Characters and Description of Limnanthes, a New Genus of Plants allied to Floerkea . . . . 361—364

PART IV.

CONTRIBUTIONS TO SYSTEMATIC WORKS.

Genera et Species Plantarum Cruciferarum, necnon Generis Cleome, quæ in Horto Kewensi coluntur . . 367—415

Genera et Species quædam Plantarum Leguminosarum, quæ in Horto Kewensi coluntur . . . . 417—447

Genera et Species quædam Plantarum Myrtacearum, quæ in Horto Kewensi coluntur . . . . . 449—457

PAGE
Genera et Species quædam Plantarum Compositarum, quæ in Horto Kewensi coluntur . . 459—470
Genera et Species Plantarum Orchidearum, quæ in Horto Kewensi coluntur . . . 471—499
Genera et Species Plantarum e variis Familiis, quæ in Horto Kewensi coluntur . . . . . . 501—510
Extracts from Dr. Richardson's Botanical Appendix to the "Narrative of a Journey to the Polar Sea, by Captain Franklin;" with Addenda 511—527
Names of and Notes on Indian Plants; extracted from Dr. Wallich's "Numerical List" . . . 529—538
Notes and Observations on Indian Plants; extracted from Dr. Wallich's "Plantæ Asiaticæ Rariores" . . . . 539—556
Extracts from "Plantæ Javanicæ Rariores" . . 557—666
Contributions to the "Botanical Magazine" . . . 667—679
Contributions to the "Botanical Register" 681—699
Names, &c., of Plants contributed to various publications, between 1818 and 1826; and Names quoted from R. Brown's Herbarium in Mr. Bentham's "Flora Australiensis" . . . 701—711
Short Contributions to various Works, and occasional Notices, Botanical and Geological . . . . 713—727

Index of Subjects to Vol. II . 729—735
Index of Names of Plants to both Volumes . . 737—786

PART III.

SYSTEMATIC MEMOIRS.

ON THE

NATURAL ORDER OF PLANTS

CALLED

PROTEACEÆ.

BY

ROBERT BROWN, LIB. L.S.

(READ JAN. 17TH, 1809.)

[*Extracted from the 'Transactions' of the Linnean Society of London, Vol. X, pp.* 15—226.]

LONDON.

1810.

ON THE PROTEACEÆ OF JUSSIEU.

THE Linnean system of botany, though confessedly [15 artificial, has not only contributed more than all others to facilitate the knowledge of species, but, by constantly directing the attention to those essential parts of the flower on which it is founded, has made us acquainted with more of their important modifications than we probably should have known, had it not been generally adopted, and has thus laid a more solid foundation for the establishment of a natural arrangement, the superior importance of which no one has been more fully impressed with than Linnæus himself.

There are still, however, certain circumstances respecting the stamina and pistilla, which appear to me to have been much less attended to than they deserve, both by Linnæus and succeeding botanists. What I chiefly allude to is the state of these organs before the expansion of the flower. The utility of ascertaining the internal condition of the ovarium before fœcundation will hardly be called in question, now that the immortal works of Gærtner and Jussieu have demonstrated the necessity of minutely studying the fruits of plants in attempting to arrange them according to the sum of their affinities, as in many cases the true nature of the ripe fruit, especially with respect to the placentation of the seeds, can only be determined by this means. Its importance is indeed expressly inculcated by many botanists, who, however, have frequently neglected it in practice : [16 nor do I find any one who has steadily kept it in view, except Aubert Du Petit-Thouars in his excellent work on the plants of Madagascar and the Isles of France and Bourbon.

The bursting of the antheræ has, it is true, been generally observed, and many of its most unusual modes have been introduced into the characters of genera; but the examination of these organs, at a still earlier period, has been universally neglected; and hence the very imperfect knowledge which, even now, is possessed of their real nature in two of the most remarkable families of plants, the Orchideæ and Asclepiadeæ.

Examples of the great advantage of observing the antheræ in this early stage will hereafter be given in my general remarks on the order which is the proper subject of this essay. But I trust I shall be pardoned for here introducing some account of their structure in Asclepiadeæ, as it will enable me not only to bring forward the most striking proof of the importance of this consideration with which I am acquainted, but also, as I apprehend, to decide a question which has long occupied, and continues to divide, the most celebrated botanists.

The point in dispute is whether this order, comprehending Asclepias, Cynanchum, Pergularia, Stapelia, and several genera, at present confounded with these, ought to be referred to Pentandria or Gynandria, and, if to the latter, whether the antheræ are to be considered as five or ten; all of which opinions have had advocates of the greatest name in the science.

According to Linnæus, Jussieu, and Richard, they belong to Pentandria.

Linnæus has assigned no reason for his opinion, which, however, it appears he retained after he became acquainted with the observations of Jacquin and Rottboell; but it is
17] probable he was induced to adopt it more from the consideration of the close analogy these plants have with the manifestly pentandrous Apocineæ, than from regarding them as strictly referable to this class; for, in his natural generic characters of Asclepias and Pergularia, he very clearly describes both these genera as gynandrous.

Jussieu has entered more fully into the subject, but seems also to have been chiefly guided by this analogy and the observations of others; as he concludes by expressing his doubts, respecting both the origin and use of the parts.

Richard, whose description of these organs I find in Persoon's Synopsis, has indeed come nearer to the solution of the question; his account, however, of the origin of the lateral processes hereafter mentioned, proves that this description was not altogether formed on actual observation.

Jacquin, the first botanist that submitted these plants to minute examination, and whose figures well illustrate most points of their structure, has adopted a very different opinion, referring them to Gynandria, in which he is followed by Koelreuter, Rottboell, and Cavanilles, all of whom likewise agree with him in considering them as decandrous; while Dr. Smith, in his late valuable Introduction to Botany, who conceives that "no plants can be more truly gynandrous," regards them as having only five antheræ. And lastly Desfontaines supposes the five glands of the stigma to be the true antheræ, considering the attached masses of pollen as mere appendages to these.

All the authors who thus refer them to Gynandria seem quite confident in the justness of their views; and yet the inspection of a single flower bud overturns, as it appears to me, with irresistible evidence, the conclusion they had formed from premises apparently so satisfactory.

My attention, while in New Holland, having been much engaged by the plants of this family, the species in that [18 continent being both numerous and with difficulty reducible to established genera: I there observed the following facts concerning them, all of which I have, since my return to England, confirmed by the examination of different species of the same tribe.

The observations of Jacquin on this subject being generally known, it must be unnecessary to enter into a minute description of those organs which are well exhibited by his figures in every respect, except as to the origin of the supposed antheræ.

If a flower bud of any plant of this family, while scarcely

half the size it attains immediately before expansion, be carefully examined, it will be found that the polleniferous sacs, as they are termed by Jacquin and his followers, in which they suppose the antheræ to be merely immersed, are really the organs by which the fœcundating matter is secreted: for at this period they are perfectly closed, and consequently all communication cut off between the stigma and their contents now consisting of a turbid fluid or pulpy mass. If the stigma be at the same time observed, the gland-like bodies which originate in its grooved angles are already visible; but, instead of having the cartilaginous or horny texture which they at length acquire, are as yet semi-fluid, and of hardly a determinate form. Near the base of each side of these grooves a more superficial depression is observable, which, though in some cases extremely short, is in others of considerable length, and generally forms a right angle with the corresponding groove. In these depressions, the processes by which, at a more advanced stage, the contents of the antheræ are connected with the stigma, are immersed, and at this period they are found to be semi-fluid. By degrees the glands, as well as their lateral processes, acquire a firmer consistence, and the inferior or outer extremity of each of the processes, being extended beyond
19] its depression or furrow, on the bursting of the opposite cell of the corresponding anthera, firmly attaches itself to its contents, now become a regular mass of a waxy consistence.

If the accuracy of this statement be admitted, it will probably be allowed that the *Asclepiadeæ* cannot be regarded as gynandrous, especially in the sense in which they are so considered by botanists; but lest it should not be thought completely satisfactory, it may be added, that in a still earlier stage of the flower bud I have found the fœcundating matter already secreted in the cells of the antheræ, while the glands of the stigma, as well as their processes, were absolutely invisible.

As to the question of their being pentandrous or decandrous, every analogy must lead us to refer them to the former class; nor, indeed, have they, when not considered as gynandrous, been ever supposed to belong to Decandria.

An œconomy, in many respects similar to that now described, obtains also in Orchideæ; in which, however, the processes connecting the antheræ with the stigma, where they exist, are in many cases derived from the masses of pollen themselves; but in others they as certainly originate from the stigma, or its glandular appendage.

The result of my examination of these two interesting orders of plants I hope hereafter to submit to the Society; and I now proceed to the proper subject of the present paper.

The natural order of PROTEÆ, or, as it is less exceptionably called, PROTEACEÆ, was first established in the Genera Plantarum of the celebrated Jussieu; and the description there prefixed to it will, with a few alterations, still apply to the order, now that it has received so many additions, not only in species, but in very distinct genera, several of which were first published by Dr. Smith, in [20 the 4th vol. of the Society's Transactions, and others are in the present paper submitted to the consideration of botanists.

The general description and definition of the order will be most advantageously placed at the head of its systematic arrangement; before entering upon which, I shall offer some remarks on its geographical distribution, and likewise on such modifications of structure in the different organs as appear to be of the greatest importance in indicating or characterising genera.

The geography of plants being as yet in its infancy, the smallest addition to our knowledge of a subject which promises to become of considerable importance, will probably be received with indulgence; and in this persuasion I venture to make the following observations on the order before us. In the first place, it is remarkable that the PROTEACEÆ are almost entirely confined to the southern hemisphere. This observation originated with Mr. Dryander, and the few exceptions hitherto known to it, occur considerably within the tropic. The fact is the more

deserving of notice, as their diffusion is very extensive in the southern hemisphere, not merely in latitude and longitude, but also in elevation; for they are not only found to exist in all the great southern continents, but seem to be generally, though very unequally, spread over their different regions: they have been observed also in the larger islands of New Zealand and New Caledonia; but hitherto neither in any of the lesser ones, nor in Madagascar. As in America, they have been found in Terra del Fuego, in Chili, Peru, and even Guiana, it is reasonable to conclude that the intermediate regions are not entirely destitute of them. But with respect to this continent, it may be observed, that the number of species seems to be comparatively small, their organization but little varied; and further, that they have a much greater affinity with those
21] of New Holland than of Africa.

Of the botany of South Africa, scarce anything is known, except that of the Cape of Good Hope, where this family occurs in the greatest abundance and variety; but even from the single fact of a genuine species of Protea having been found in Abyssinia by Bruce, it may be presumed, that in some degree they are also spread over this continent.

With the shores, at least, of New Holland, under which I include Van Diemen's Island, we are now somewhat better acquainted, and in every known part of these, Proteaceæ have been met with.

But it appears that, both in Africa and New Holland, the great mass of the order exists about the latitude of the Cape of Good Hope; in which parallel it forms a striking feature in the vegetation of both continents.

What I am about to advance respecting the probable distribution of this family in New Holland, must be very cautiously received; as it is in fact chiefly deduced from the remarks I have myself made in Captain Flinders's Voyage, and subsequently during my short stay in the settlements of New South Wales and Van Diemen's Island, aided by what was long ago ascertained by Sir Joseph Banks, and by a very transitory inspection of an herbarium collected on the west coast, chiefly in the neighbourhood of Shark's Bay, by the botanists attached to the expedition of Captain Baudin.

From knowledge so acquired I am inclined to hazard the following observations.

The mass of the order, though extending through the whole of the parallel already mentioned, is by no means equal in every part of it; but on the south-west coast forms a more decided feature in the vegetation of the [22 country, and contains a far greater number of species than on the east:—and in that part of the south coast, which was first examined by Captain Flinders, it seems to be more scanty than at either of the extremes.

On the west coast also, the species upon the whole are more similar to those of Africa than on the east, where they bear a somewhat greater resemblance to the American portion of the order.

From the parallel of the mass, the order diminishes in both directions; but the diminution towards the north is probably more rapid on the east than on the west coast.

Within the tropic, on the east coast, no genera have hitherto been observed, which are not also found beyond it; unless that section of *Grevillea*, which I have called *Cyclopteræ*, be considered as a genus. Whereas at the southern limit of the order several genera make their appearance, which do not occur in its chief parallel.

The most numerous genera are also the most widely diffused. Thus *Grevillea, Hakea, Banksia*, and *Persoonia*, extensive in species in the order in which they are here mentioned, are spread nearly in the same proportion; and they are likewise the only genera that have as yet been observed within the tropic.

Of such of the remaining genera, as consist of several species, some, as *Isopogon, Petrophila, Conospermum*, and *Lambertia*, are found in every part of the principal parallel, but hardly exist beyond it. Others, as *Josephia*[1] and *Synaphea*, equally limited to this parallel, have been observed only towards its western extremity; while *Embothrium*

---

[1] Subsequently in this paper altered to *Dryandra*. Confer *Prodr. Fl. Nov. Holl.* 1, *p.* 396.—EDIT.

(comprehending for the present under this name all the many-seeded plants of the order),[1] which is chiefly found on the east coast, and makes very little progress towards the west, advances to the utmost limit of south latitude, and there ascends to the summits of the highest mountains.

23] Genera consisting of one or very few species, and which exhibit generally the most remarkable deviations from the usual structure of the order, are the most local, and are found either in the principal parallel, or in the highest latitude.

The range of species in the whole of the order seems to be very limited; and the few cases which may be considered as exceptions to this, occur in the most extensive genera, and in such of their species as are most strictly natives of the shores. Thus *Banksia integrifolia*, which grows more within the influence of the sea than any plant of the order, is probably also the most widely extended, at least in one direction, being found within the tropic, and in as high a latitude as 40°. It is remarkable, however, that with so considerable a range in latitude, its extension in longitude is comparatively small: and it is still more worthy of notice, that no species of this family has been found common to the eastern and western shores of New Holland.

The celebrated traveller Humboldt is the first who has expressly pointed out a remarkable difference in the distribution of the species of plants.

He observes that, while the greater number grow irregularly scattered and mixed with each other, there are some which form considerable masses, or even extensive tracts, to the nearly absolute exclusion of other species. Of plants growing thus in society, the greater number occur in the temperate zones; and of these, the most decided instances will readily present themselves to every botanist. I venture to add, that such as exist within the tropic, are found, either at considerable heights or on the sea-shores.

To this class very few of the Proteaceæ can be said to belong. *Protea argentea* of Linnæus is the most striking example among the African species; and my friend Mr. [24 Ferdinand Bauer has observed a similar tendency in *Protea mellifera.*

---

[1] In the systematic part of the present Memoir, the Australian species of *Embothrium* are separated under the generic names of *Knightia*, *Lomatia*, and *Stenocarpus*.—EDIT.

Among the New Holland species, *Banksia speciosa* is the sole instance, and even that only in certain circumstances, of this manner of growth.

The favourite station of Proteaceæ is in dry stony exposed places, especially near the shores, where they occur also, though more rarely, in loose sand. Scarcely any of them require shelter, and none a good soil. A few are found in wet bogs, or even in shallow pools of fresh water; and one, the *Embothrium ferrugineum* of Cavanilles, grows, according to him, in salt marshes.

Respecting the height to which plants of this order ascend, a few facts are already known. The authors of the Flora Peruviana mention, in general terms, several species as being alpine; and Humboldt, in his valuable Chart of Æquinoctial Botany, has given the mean height of *Embothrium emarginatum* about 9300 feet, assigning it a range of only 300 feet. On the summits of the mountains of Van Diemen's Island, in about 43° south latitude, at the computed height of about 4000 feet, I have found species of *Embothrium,* as well as other genera hitherto observed in no other situation. *Embothrium,* however, as it is the most southern genus of any extent, so it is also, as might have been presumed, the most alpine of the family.

Two genera only of this order are found in more than one continent: *Rhopala,* the most northern genus, which, though chiefly occurring in America, is to be met with also in Cochin-China and in the Malay Archipelago; and *Embothrium,* the most southern genus of any extent, is common to New Holland and America.

From this account of the geographical distribution of [25 the Proteaceæ, I proceed to make some general remarks on the structure and modifications of their different parts. The order, which consists of shrubs of the most rigid nature, or of trees of moderate size, contains also one herbaceous plant, my *Symphionema paludosum,* which, however, except in this respect and in the union of the tops of its filaments, does not remarkably differ from the usual structure of the family.

The pubescence, which is very general in the order, consists either of a short and in many cases nearly impalpable tomentum, or of soft hairs which are either spreading, close pressed, or somewhat crisped, generally simple, but in some genera fixed by the middle, and in a very few cases glandular.

The existence or absence of pubescence in the adult leaves cannot always be depended upon in distinguishing species; but the short tomentum, especially of their under surface, is of greater consequence than the spreading hairs. In the bracteæ more reliance may be placed on it, and in the different parts of the flower I have never hesitated to employ it in my specific characters. In the calyx I have even derived the greatest advantage in some difficult genera, especially *Serruria,* from attending to its differences in direction.

Mr. Salisbury has introduced the pubescence of fruit into several of his generic characters, and in some I think with evident advantage, but in such only as where from its abundance and length it performs a function of manifest importance in assisting dissemination: hence I conceive it may be safely admitted into the characters of *Protea* and *Isopogon;* but I can perceive no advantage whatever in employing it in those of *Serruria* and *Spatalla.* For this reason too it ought not to be used in the capsular or drupaceous genera, in which indeed experience proves it to 26] be of no further moment than in distinguishing species.

Dr. Smith has given it as his opinion, that from the disposition of leaves in New Holland plants no conclusion can safely be drawn as to their genera. This remark however appears to me only applicable to certain families, or rather genera; for in many tribes the plants of that country are altogether as constant in their leaves as in any other part of the world. In proof of this, it may be sufficient to mention the order Rubiaceæ; and there are many others in which I find nothing at all remarkable in this respect.

As to Proteaceæ, it must be acknowledged that in *Banksia* both verticillated and scattered leaves occur; but the leaves constantly in threes in *Lambertia* seems to me a circumstance of even greater importance than the number of flowers in the involucrum; and the opposite leaves of *Xylomelum* distinguish it at once both from *Rhopala* and *Hakea*.

Although the form and divisions of leaves in the order are variable in no common degree, yet there are certain genera, both among those of Africa and New Holland, which the leaves even in these respects assist in indicating. Thus, in that genus to which I have applied the name of *Protea* (the Erodendrum of Mr. Salisbury), and I believe also in my *Leucadendron*, there is no instance of a divided or toothed leaf; thus also the leaves of *Spatalla* are filiform and undivided, and those of *Serruria* filiform and almost always pinnatifid. Their dichotomous divisions in *Simsia* and *Franklandia* are still more characteristic; and their division and remarkable reticulation readily distinguish *Synaphea* from *Conospermum*.

The inflorescence in Proteaceæ, whatever use botanists may think proper to make of it in their generic characters, is of undoubted importance in determining genera, and [27
even in the primary division of the order it appears to be of nearly equal consequence with the fruit itself; for, in dividing the order into two sections from the structure of the ovarium, it will be found that while all the single-seeded genera have each flower subtended by a proper bractea, or more rarely are without one, those with two or more seeds have, with very few exceptions, the flowers of their spikes or clusters disposed in pairs, each pair being furnished with only one bractea common to both flowers: it may also be observed that all the American and two thirds of the New Holland species have this mode of inflorescence, while only one instance of it occurs in Africa.

The single envelope of the stamina and pistillum in Proteaceæ I have, with Jussieu, denominated CALYX, chiefly because the stamina, of equal number with its laciniæ, are constantly opposite to them, and from the close analogy

subsisting between this family and that of Thymeleæ, in which I believe the greater number of botanists will allow that this envelope is really calyx: and as this latter argument may be considered as the stronger, I shall endeavour to establish the identity of this organ in these two families. In several of the Thymeleæ, especially in *Pimelea*, the lower part of the tube of the calyx is, as it were, jointed with the upper; after the falling off of which, it remains surrounding the fruit: this is also the case in several genera of Proteaceæ, as in *Adenanthos* of Labillardière, in *Isopogon*, in *Grevillea Chrysodendron*, and still more remarkably in *Franklandia,* in which the persistent tube becomes indurated and even nearly woody, a change surely not likely to take place in a genuine corolla. But though I have thus adopted the language of Jussieu, I am decidedly of opinion that, in all families having a single
28] envelope, it will be still better to call it perianthium or perigonium, which latter term was proposed by Ehrhart, and is adopted by Decandolle.

A circumstance meriting the attention of the theoretical botanist, respecting the calyx in this order, is its invariable division into four leaves or segments; for the single exception noted by Linnæus in his description of the male flowers of *Brabejum*, he himself seems afterwards to have distrusted, from the manner in which he has introduced it into the amended generic character given in the Mantissa; and I may add, that in nearly 400 species of the order, which I have examined, I have not met with a single exception to this rule.

With this uncommon constancy in point of number, it is remarkable that there is, in the whole order, a strong tendency to irregularity in form, the various kinds of which are of great importance in characterising genera.

Before the expansion of the calyx the margins of its segments are applied to each other; and from the unequal degrees of cohesion in many cases subsisting among them after expansion, several kinds of irregularity arise. I am not sure that any term has been contrived for this manner of æstivation, except it be the *æstivatio valvata* of Linnæus;

but as he has not defined it, and as his commentator Reuss has given the very different æstivation of grasses as an example, I have, in introducing this circumstance into the general description of the order, specified it at length.

From the colour of the calyx, many genera of Proteaceæ are indicated with tolerable certainty. Thus *Synaphea* is distinguished from *Conospermum* by its yellow flowers; and no instance of yellow flowers has been met with in the numerous genera *Serruria* and *Spatalla*, nor any of purple in *Leucadendron*. In some genera, however, as in *Banksia*, [29
and *Isopogon*, it is evidently of very little importance.

The fleshy or scale-like bodies, which surround the ovarium in the greater number of plants of this family, are in many cases so manifestly secreting organs, that it is surprising Mr. Salisbury should hesitate in considering them as nectaria, and denominate them calli; a term which excludes the idea of secretion. But whatever their functions may be, great assistance may certainly be derived from their various modifications, in distinguishing genera. Their importance however in this respect, like that of all other parts, not only in this, but, as I apprehend, in every natural family, is very unequal, and in some cases seems to be entirely lost. Thus, in the genus *Leucadendron* as it is here constituted, they are wanting in several species, and in some I am inclined to think exist only in the males.

In most of the regular-flowered genera they are four in number, and alternate with the leaves or laciniæ of the calyx. In these genera they are also generally in the form of succulent scales, distinct, or more rarely cohering at their base, and in a very few instances adhering to the calyx; but in *Persoonia* they are nearly round and fleshy, and in *Bellendena*, *Symphionema*, *Simsia*, *Agastachya*, *Petrophila*, and *Isopogon*, they are entirely wanting.

In the irregular-flowered genera with two or many seeds their number is less than four, in most cases only one exists, in a few others three, and in some none.

Varieties in the structure or apparent origin of the STAMINA, afford, as might be expected, important generic characters. Their usual insertion in the order is in the

concave tops of the laciniæ of the calyx; all considerable deviations from which may safely be employed in charac-
30] terising genera. In this way *Rhopala, Xylomelum,* and *Lambertia* are readily distinguished from *Embothrium, Grevillea,* and *Hakea;* and thus also *Persoonia* and *Brabejum* remarkably differ from *Guevina;* while *Bellendena* differs from all others in having its stamina distinct from the calyx, affording however an indication of the real origin of these organs in the whole family.

The deviations from the usual structure of ANTHERÆ in this order are not many; but some of them are of so singular a nature as to constitute the essential characters of the genera in which they take place. These genera are *Simsia, Conospermum,* and *Synaphea,* all of which are most truly syngenesious; for not only do their antheræ firmly cohere together, but the corresponding lobes of these being, when considered separately, entirely open, are so applied to each other as to form but one cell, without a trace of any intermediate membrane. In *Simsia* the four antheræ are perfect, each consisting, as in the rest of the order, of two lobes, and therefore the whole before bursting constitute four cells. Whereas in *Conospermum* and *Synaphea* one filament is entirely barren, the two lateral ones have each a single-lobed anthera, and the fourth alone is perfect: hence before bursting the whole form only two cells.

This remarkable structure, which can only be ascertained before the opening of the calyx, necessarily escaped Dr. Smith in describing his *Conospermum,* for I conclude he had only the expanded flower before him, and the appearance of the antheræ in this state after their separation justifies him in referring the genus to Tetrandria: but according to the view now given of its structure, it can have no other pretension to a place in this class than its belonging to Proteaceæ; and the order Syngenesia Monogamia being abolished, it must be referred to Triandria.

The only remaining anomaly in these parts occurs in
31] *Franklandia,* and consists in the anthera, or rather that portion of the filament on which it is fixed, adhering to the calyx through its whole length.

The figure of the POLLEN has been attended to by a few theoretical, but by hardly any practical botanists; yet I am inclined to think, not only from its consideration in this family, but in many others, that it may be consulted with advantage in fixing our notions of the limits of genera: and though its minuteness may perhaps always exclude it from a place in generic characters, yet it well deserves, to use the words of Linnæus when speaking of habit, to be "occulte consulendus."

Its usual figure in the order is triangular with secreting angles, a beautiful contrivance for insuring impregnation in a tribe, in which, from the very scanty, or in many cases apparent want of secretion by the stigma, it must otherwise have been very uncertain; for by this form and secretion, as well as by the singular œconomy of the calyx, it remains so long in contact with the stigma, as probably to compensate for the somewhat defective structure of that organ.

From this figure the principal deviation is in the extensive genera *Banksia* and *Josephia*, in all of which it is elliptical or oblong, and either straight or bent into a semilunar form; and in *Franklandia* and *Aulax*, where it is spherical. The only remaining exception with which I am acquainted is the original *Embothrium* of Forster, his *E. coccineum*, in which, as in *Banksia*, it is oblong; a circumstance that, together with the more important character of a regular club-shaped stigma, and some other differences, has determined me to separate it from all the other species of *Embothrium*, except *E. lanceolatum* of Flora Peruviana, whose pollen however remains to be examined.

The external modifications of the OVARIUM must be very cautiously used in the generic characters of this family; [32
even its being sessile or pedicellated is not always of sufficient importance, though I think Mr. Salisbury has done well in introducing it into his characters of *Serruria* and *Spatalla*, in both which genera I had overlooked it before the publication of his Essay.

Its internal structure, which ought always to be ascertained, will be found of the greatest importance in most cases, but fails in *Persoonia*, the species of which differ in having one or two seeds: it would seem however, in this case, that an irregularity in a point of such importance could not take place unaccompanied with other anomalies in the same organ, and accordingly such are found to exist in this genus, and will be mentioned when treating of the fruit.

Besides number, the insertion of the ovula is also to be attended to; for though this may generally be presumed from the situation of the radicula in the ripe seed, yet to this criterion there are several exceptions, even in the present order: thus, while the radicula constantly points downward in the whole of the order, the insertion of the ovulum is in many cases at the top or side of the cell of the ovarium. My observations on this subject are as yet incomplete; but, from those that I have made, I am inclined to think such differences will be connected with genera, or rather perhaps with particular kinds of fruit. Thus I conjecture, in *Leucospermum, Mimetes, Nivenia*, and *Spatalla*, the insertion to be uniformly lateral.

The STYLE, though not subject to much variety in this family, will be found in a few cases to furnish generic characters. Thus in *Protea*, strictly so called, the persistent subulate style forms an important part of its character: and the persistency of the whole of the style in the greater number of species of *Grevillea* will probably be used by 33] future botanists in distinguishing them from that remarkable section of the genus, which I have at present united with them and called *Cyclopteræ*. Its length also, when compared with that of the calyx, seems in some cases to be of importance, as in distinguishing *Adenanthos* from *Spatalla*; but in general this circumstance can hardly be had recourse to except in specific characters.

The form of the STIGMA is in many cases of considerable importance in characterising genera, a fact which could not escape the penetration of Dr. Smith when establishing his new genera of this order: thus its conical papilla in his *Conchium* (the *Hakea* of Schrader) will in many, though certainly not in all cases, distinguish it from *Grevillea*: but its form in both these genera will readily serve to separate them from *Xylomelum* and *Rhopala;* and thus also *Spatalla* remarkably differs from *Adenanthos.* Upon the whole, however, it seems that its obliquity is of greater importance than its form; for this, when existing in any great degree, is generally accompanied with a corresponding irregularity in the calyx: but as this irregularity is produced for the purpose of bringing all the antheræ into contact with the stigma, so its obliquity in the dioiceous genera *Leucadendron* and *Aulax* is not attended with so great a degree of irregularity, which would here serve no end, impregnation depending on the pollen of different individuals, to insure which the surface of the stigma in these genera is rough with papulæ; a circumstance that, together with its form, readily distinguishes them from all others of the order.

In *Synaphea,* the stigma or summit of the style inosculates with the divisions of the barren filament, which in some species appear beyond it in horn-like processes, but in others are entirely lost in its substance. I am acquainted with nothing like this in the whole vegetable kingdom; and such a singularity alone, when occurring in several [34 species, would have determined me to separate these plants from *Conospermum:* but being also accompanied by other remarkable differences, both of structure and appearance, no genus, I apprehend, can be better founded than this.

That the opinion of Christian Knaut and Vaillant respecting the non-existence of naked seeds is correct when anatomically considered, there can be no doubt; but the practical utility of deviating in this subject from the common language of botanists may still be questioned: and accordingly Gærtner, who was fully aware of the truth of their position, has nevertheless continued to describe the seeds of many plants as naked. I confess however I am inclined to adopt the opposite decision of the French botanists, at the head of whom is Richard, who has also proposed terms for distinguishing the various species hitherto confounded under the name of naked seeds. The fruit of the monospermous genera of Proteaceæ might probably be with advantage referred to that which he has termed *Akenium;* but as I am unwilling in the present paper to adopt any term not more generally sanctioned and understood than this, I shall content myself with calling those *nuces,* which are either not at all or but slightly compressed and not bordered; and apply the term *samara* to such as are either very much compressed, or with a less remarkable compression are surrounded or terminated by a membranaceous border: that I regard these distinctions however as in some cases of very little importance, may be inferred from this, that my genus *Leucadendron* includes both these kinds of fruit.

The first observation I have to offer on the fruits of Proteaceæ is, that there is no really bivalvular capsule in the order; a truth which was not perceived by Gærtner in 35] describing his *Banksia dactyloides* (the Conchium dactyloides of Dr. Smith), and which has equally escaped Cavanilles and Labillardière in their characters of *Hakea.* Dr. Smith has more cautiously omitted this consideration in his character of that genus, and Professor Schrader has accurately described the suture as only existing on one side: such fruits then are as truly folliculi as those of *Grevillea, Rhopala,* or *Embothrium;* and that the existence of a distinct placenta is by no means necessary to constitute this kind of fruit, is proved even by some genera of Apocineæ, to which family this term was first applied.

A circumstance occurs in some species of *Persoonia* to which I have met with nothing similar in any other plant: the ovarium in this genus, whether it contain one or two ovula, has never more than one cell; but in several of the two-seeded species a cellular substance is after fœcundation interposed between the ovula; and this gradually indurating acquires in the ripe fruit the same consistence as the putamen itself, from whose substance it cannot be distinguished; and thus a fruit originally of one cell becomes bilocular: the cells however are not parallel, as in all those cases where they exist in the unimpregnated ovarium, but diverge more or less upwards.

In all the seeds of this order there is a very manifest

CHALAZA, which, whatever may be the point of insertion of the seed, is always situated at its upper extremity; and I have not been able to observe any fasciculus of vessels connecting it with the umbilicus in cases where this latter is placed in a different part of the seed.

I am not aware of any function being ascribed to the CHALAZA of seeds, except the nutrition of their proper membrane: but it appears to me too remarkable a part to be destined for this purpose only; and some observations I have made induce me to suppose that it is the organ [36 secreting the liquor amnios. This opinion I was first led to form by observing in some species of *Persoonia*, in which the inspissated remains of this fluid are visible in the ripe fruit, that it evidently originated in the *chalaza* and continued to adhere to it: nothing has hitherto occurred to invalidate this opinion, which is here however hazarded merely as a conjecture, requiring for its confirmation more numerous and decisive facts than I can at present adduce.

That the ALBUMEN of seeds is merely that condensed portion of the liquor amnios which remains unabsorbed by the embryo, seems to me very satisfactorily established; and as this fluid is in the early stage never wanting, all seeds may in one sense be said to have albumen: but while in some tribes this unabsorbed part in the ripe seed many times exceeds the size of the embryo, so there are others in which not a vestige of it remains; and such has hitherto been supposed to be the case with Proteaceæ: nor are the few exceptions with which I am at present acquainted of so decisive a nature as to invalidate this character of the order; for they occur only in some species of *Persoonia*, where the semi-fluid remains of this substance are observable between the cotyledons; and in *Bellendena*, in which it continues to form a thin fleshy coat on the inner surface of the proper membrane of the seed. From such instances, however, we may expect to find plants with a more copious albumen, which nevertheless it may be necessary from the whole of their organisation to refer to this family.

The RADICULA pointing towards the base of the fruit in all Proteaceæ is a circumstance of the greatest importance in distinguishing the order from the most nearly related tribes; and its constancy is more remarkable, as it is not accompanied by the usual position or even uniformity in the situation of the external umbilicus.

37] If Gærtner had not described the PLUMULA of *Protea argentea*, I should not have hesitated to assert that it was inconspicuous in the whole order.

The number of COTYLEDONS when more than two is a circumstance of little importance. In *Persoonia*, the only genus of the order in which a plurality of cotyledons has been observed, I am not even certain that their number is constant in those species in which this anomaly occurs.

In the following part of this essay it may be observed, that the genera into which I have subdivided the great African family *Protea*, are in most cases similar to those already proposed by Mr. Salisbury in the Paradisus Londinensis: from that essay however they are certainly not derived, but before its publication were formed and submitted to the judgment of Mr. Dryander, at whose suggestion they are now offered to the Society. That the results of an examination conducted by two observers wholly independent of each other, are so similar, will probably be considered as some proof of their correctness.

As Mr. Salisbury's generic names have the unquestionable right of priority of publication, I have in most cases adopted them, though I wish some of them had been differently constructed. But as I cannot accede to his application of the Linnean names *Protea* and *Leucadendron*, I shall here, that I may not disturb the following arrangement, assign my reasons for differing from him in this respect; and as in so doing I am obliged to trace the progress of Linnæus's knowledge of the family, I persuade myself that this will in some degree compensate for the otherwise unwarrantable length of the discussion.

The name PROTEA, which originated with Linnæus, first occurs in the folio edition of his Systema Naturæ published in 1735; no generic characters are there given,
38]

but from the references to Boerhaave's figures it is evident that the genus is to be understood in the same extensive sense which he at length gave it in the second Mantissa. In 1737 appeared the Genera Plantarum, and in it for the first time the natural generic character of *Protea:* as in this work he only cites *Lepidocarpodendron* and *Hypophyllocarpodendron* of Boerhaave, it follows that here the genus is more limited, though its character is not peculiarly applicable to either of Boerhaave's genera referred to; and the description of antheræ and germen is not reconcilable to any plant whatever of the family. In the same year Hortus Cliffortianus was published, in which he resumes his first opinion of Protea, reducing to it all Boerhaave's genera, but referring to the character given in his own Genera Plantarum. It does not appear on what ground this change of opinion was formed; for in Clifford's garden, according to Viridarium Cliffortianum, there had only been two species, *Protea argentea* and *saligna*, neither of which had flowered, and the former was already lost; while in his Herbarium, now in the collection of Sir Joseph Banks, the specimens of all the three species given in the body of the work are without fructification, and of *Protea racemosa* added in the appendix there is no specimen whatever.

If Linnæus is to be considered in a great degree the author of the Prodromus Floræ Leydensis, published by A. Van Royen in 1740, as has been asserted by some of his pupils, and may be inferred from a passage in his Diary published by Dr. Maton, it must be noticed as his next work in the order of time; for from the same Diary it appears that he could only have been employed in its composition in 1738. In this work the genus Protea is given in the same extensive sense as in Hortus Cliffortianus, and no fewer than twenty-one species are characterised, of which however only two were in the Leyden [39 garden, the rest being described from specimens in Van Royen's Herbarium.

In 1738 he also published his Classes Plantarum, in which, notwithstanding he appears to have composed it while engaged in the arrangement of Van Royen's collection, another fluctuation of opinion occurs, *Protea* being limited as in the first edition of the Genera Plantarum, and to *Leucadendros*, which here for the first time occurs, he refers the *Conocarpodendron* of Boerhaave.

In 1740 he published the second edition of Systema Naturæ, where the names *Protea* and *Leucadendron* are both given; but the references to Boerhaave are reversed, Protea being confined to his Conocarpodendron, and Leucadendron comprehending his other two genera. In this sense they also appear in the second edition of the Genera Plantarum published in 1742, in which the character of Leucadendron is first given, some of whose species he must, from the annexed asterisk, have seen recent: his description of corolla and pistillum is only applicable to Lepidocarpodendron.

In 1745 Linnæus received the Herbarium of Hermann, from which he composed his Flora Zeylanica: the fourth volume of this collection containing a mixture of Ceylon and African plants, the latter are not noticed in this work; but from an inspection of the Herbarium itself, now in the Banksian collection, it appears that he had added generic names to most of them: of Proteæ only three species exist in the volume, of which *Protea conocarpa* is one: of this there are on the same page two specimens, whose heads of flowers are separately pasted; under one of these specimens he has written Leucadendron, and under the second Protea; to a specimen of *Protea Serraria* on a different 40] page he has given the name of Santolina. These facts are mentioned to prove, that at this period his knowledge of the family must have been chiefly derived from Boerhaave's figures, and perhaps from specimens which he had casually seen.

In 1748 the sixth edition of Systema Naturæ appeared, where the essential characters of Protea and Leucadendron first occur, both of them evidently derived from the natural characters previously given.

In 1753 the Species Plantarum, the most accurate of all his works, was given to the world; both genera are found in it, their species characterised, and trivial names for the first time applied to them: of Protea there are only two species, *P. argentea* and *fusca;* to the former however he referred as varieties *P. saligna, conifera,* and three others; to the whole adding the following observation, which may be supposed to contain his chief reason for applying his name Protea to this genus rather than to that for which in his Classes Plantarum he had first intended it. "Planta naturalis in patria argentea excellit fronde inter arbores nitidissima omnium; at culta et captiva extra patriam exuit decus; variat dein etiam domi mille modis verè Protea."

At this time he had in his Herbarium a specimen without fructification of *Protea argentea* properly so called; but of its supposed varieties or of *P. fusca* none whatever. Of his genus *Leucadendron* he had only one species, *L. proteoides,* afterwards called *Protea purpurea,* a plant differing in many respects from the tribe to which he had, though not without hesitation, referred it.

In 1754 the fifth edition of Genera Plantarum appeared, in which the characters of both genera remain exactly as in the second.

In 1759 was published the tenth edition of Systema Naturæ, where the essential generic characters are nearly [41
the same as in the sixth, and the specific characters are copied from the Species Plantarum.

Of this latter work the second edition appeared in 1762: it contains two additional species of *Leucadendron* described from Burmannus's Collection and Plantæ Africanæ; Protea argentea of the first edition is here divided into two species; the first *Protea argentea* now so called, the second comprehending *P. saligna, conifera,* and three other nearly related species: to this latter the greater part of the observation added to *P. argentea* of the first edition is annexed, though evidently less applicable to the species thus divided.

In the sixth edition of Genera Plantarum printed in 1764 no alterations are made in the characters of these two genera.

In Mantissa prima published in 1767, two new species of Leucadendron are described: neither of these, however, he had in his Herbarium: the first, *Leucadendron speciosum,* he had probably accidentally seen, the antheræ of which are described as filaments, and their callous apices alone as true antheræ: the description of the second, *L. pinifolium,* is by Van Royen.

In the twelfth edition of Systema Naturæ published in the same year, the species of Leucadendron are arranged in a different, and, as the author intended, a more natural order; from which it may be concluded that at this time considerable additions had been made to his Herbarium: but *L. glomeratum* is unaccountably omitted. Protea here receives again *P. Levisanus,* the P. fusca of the first edition of the Species Plantarum, which in the second had been referred to Brunia.

In Mantissa altera published in 1771, the two genera are united under the name of Protea; new characters are 42] given to the species, and most of them are described from specimens then in his Herbarium; five species are added which had already been published by the accurate Bergius; and three, *P. totta, strobilina* and *parviflora,* are here first met with: in his description of the last he seems to suspect it to be a male plant, which we now certainly know to be the case. *P. glomerata* is here again taken up; but *Protea acaulis, cancellata* and *conocarpa* are omitted; and *Protea conifera* of the second edition of the Species Plantarum is subdivided into three species, *P. conifera, pallens* and *saligna.*

In the thirteenth edition of the Systema Vegetabilium published in 1774, the essential character of the genus is adapted to its present state, and no alteration occurs among the species, except that *P. speciosa* is considered as a variety of *P. Lepidocarpodendron.*

From this statement it appears, that Linnæus in his earlier works had not sufficient materials for obtaining an accurate notion of this family; and hence that perpetual fluctuation of opinion concerning it, which has been now pointed out, and may in few words be recapitulated.

1st, He gave the genus Protea the same extent which he at length assigned to it in the Mantissa.

2dly, He limited it, leaving unnoticed that part to which at a latter period he exclusively applied the name.

3rdly, He resumed his first opinion.

4thly, He subdivided it into two genera, giving them the same names which are adopted in the present paper.

5thly, He continued the subdivision but reversed the names, and for a reason, as it would seem, which is now known to be founded in error.

And lastly, Having acquired more perfect materials [43 and perceiving the insufficiency of his characters, he united them together, thus ending exactly where he commenced.

But, as in this he has been universally followed for nearly forty years, *Protea* can no longer be considered as more strongly associated with any one species of the genus than another; and therefore this name so familiar to botanists, if the necessity of again subdividing the genus be allowed, ought certainly to be given to that part which is best known, and which contains the greatest number of published species, especially if the name be at least as applicable to this as to any other subdivision: now this part unquestionably is the Lepidocarpodendron of Boerhaave, the Protea of the first edition of the Genera Plantarum and Classes Plantarum, and of the present Essay.

The question respecting the application of the name *Leucadendron* is reducible to a smaller compass. Mr. Salisbury is aware that the Linnean character of the genus is only applicable to Lepidocarpodendron of Boerhaave; and therefore, consistently with the reasons which determined him in his application of the name Protea, Leucadendron ought to have been retained for that which he has called Erodendrum in Paradisus Londinensis; and this it seems he would have done, had it not been differently used by Plukenet, whom he professes to follow in this respect. But as rejecting Linnean names when accompanied by characters, for those of Plukenet who never published a single character, is somewhat unusual, it must be supposed to have arisen from the latter author's more appropriate use of this significant name, while it may also be presumed that Linnæus's application of it is wholly unsuitable;

and it is at least to be expected that in his own application he is consistent with Plukenet, whom he means to follow.

44] To determine how far this is the case, I have examined the figures published by Plukenet under the name of *Leucadendros*, and also his Herbarium, which forms part of the Sloanean collection in the British Museum. Of his three species so named the first is *Protea argentea*, his "*Leucadendros africana arbor tota argentea sericea foliis integris, Atlas Tree, D. Herman*," of which the figure represents a branch without fructification, and a separate fruit possibly of the same plant, but rather, as I suspect, belonging to a different species of the same genus.

On the same plate is figured a single leaf, in all probability belonging to *P. conocarpa*, with the following name, "*Leucadendro similis africana arbor argentea folio summo crenaturis florida, an Leucadendros africana foliis serratis D. Herman?*" The separate fruit accompanying this, probably does not belong to it, but to some species of that division of Leucadendron which Mr. Salisbury has called Euryspermum.

The third species, his "*Leucadendros africana, seu Scolymocephalus angustiori folio apicibus tridentatis*," is a good figure of a flowering branch of *Protea cucullata*.

It could not certainly from his publications alone be understood why the name *Leucadendros* is applied to these three plants so little alike, while different names are given to species much more nearly related to some of them than they are to each other: of this however the solution is to be found in his Herbarium; on consulting which I find, that after the publication of *Protea argentea*, with whose flowers he was unacquainted, he had acquired flowering specimens of *Protea hirta*, and had supposed these two species to be the same, pasting between two leaves of *argentea* four loose heads of *hirta*, and under the whole copying in his own hand the name *Leucadendros*, &c. at full length from his Phytographia. This satisfactorily 45] explains why he referred *P. cucullata* to Leucadendros, its flowers being very similar to those of *Protea hirta*. As to his application of this name to *P. conocarpa*, it could only proceed from his total ignorance of its fructification; for, as he has figured a nearly related species, *P. hypophylla*, under the very different name of *Thymelea*, &c., it is reasonable to conclude, that had he seen the flower of *P. conocarpa* he would have given it the same generic name. This *P. conocarpa* however, of which it may truly be said he knew nothing, and concerning which at least no information is to be derived from his works, is the only species of the three which belongs to Mr. Salisbury's genus Leucadendron.

But the original *Leucadendros* of Hermann, of Plukenet, and of Linnæus himself, is *Protea argentea*, the only plant of the family to which the name can properly be applied; to this therefore I have assigned it in the following arrangement.

Before proceeding to this arrangement, I am happy in having an opportunity of acknowledging that assistance which has so liberally been afforded me.

To the invaluable Herbarium and Library of Sir Joseph Banks I have on this, as on all other occasions, enjoyed the freest access; an advantage which has been greatly enhanced by the opportunity it has given me of consulting my friend Mr. Dryander, both as to the formation of genera and respecting synonyms, on which points his sound judgment and unrivalled erudition so well enable him to decide.

To Dr. Smith I am indebted for the permission of inspecting the Linnean Collection, and for the most friendly and satisfactory answers to the queries on this subject which he allowed me to put to him.

Mr. Lambert, whose Herbarium in this tribe is only surpassed by that of Sir Joseph Banks, has, with his [46 accustomed liberality, submitted it without reserve to my examination.

Mr. Hibbert, who for many years possessed the most extensive collection of living Proteas that has ever been formed, and who also received from his intelligent collector Mr. Niven a valuable Herbarium of native specimens, most obligingly permitted me to examine these, and even to dissect such as were new. For the like privilege I am indebted to the friendship of Mr. Aiton of Kew, who sent me his whole collection, peculiarly valuable as containing many of the original specimens of Mr. Masson: and lastly, I have to acknowledge the great assistance I have derived from the extensive collection presented to this Society by my friend Dr. Roxburgh, who during his short residence at the Cape appears to have paid particular attention to this tribe of plants, and who, besides the many new species discovered by him, has given a greater value to his Herbarium by numerous observations on the sexes, the size, and places of growth, which I have everywhere inserted on his authority.

PROTEACEÆ.

DIAGNOSIS.

Calyx tetraphyllus v. quadrifidus, æstivatione valvatâ.
Corolla nulla.
Stamina quatuor, (altero nunc sterili,) laciniis calycis opposita.
Ovarium unicum, liberum. *Stylus* simplex.
Stigma subindivisum.
Semen (pericarpii varii) exalbuminosum.
Embryo dicotyledoneus, (rarò polycotyledoneus,) rectus. *Radicula* infera.

47] DESCRIPTIO.

Frutices v. Arbores vix excelsæ; rarissimè Herbæ.
Rami in plerisque annotino-umbellati.
Folia sparsa, nunc verticillata v. opposita, persistentia, exstipulata, indivisa v. variè dentata, seu incisa profundiùsve laciniata, rarissimè verè composita.
Inflorescentia subspicata, modò laxius, in racemum v. corymbum floribus sæpè geminatis, nunc densiùs congesta

in capitulum, vel aggregata supra receptaculum planiusculum, involucro persistenti, sæpiùs imbricato, subtensum: in quibusdam quasi abortione, uniflorum, indicante involucro calyculum tunc æmulante. *Bracteæ* dum flores geminati singulis paribus communes; in capitatis persistentes, sæpiùsque auctæ et induratæ, rarò connatæ; in aggregatis nanæ, plerumque deciduæ, quandoque nullæ.

Flores in plerisque hermaphroditi perfecti, nunc organorum vitio diclines.

Calyx tetraphyllus, foliolis distinctis v. sæpiùs plùs minùs arctè cohærentibus tubulosus; *limbo* quadrifido, æquali, laciniis subspathulatis; nunc irregulari sive ex earum cohæsione rariùsve inæqualitate: coloratus, subcoriaceus, avenius, extùs sæpè pubescens, intùs glaber rariùsve barbâ utplurimùm partiali instructus, valvatim aperiens, ante expansionem marginibus subtruncatis mutuò cohærentibus: deciduus v. marcescens, dum tubulosus sæpiùs a basi tandem quadrifidâ abscedens, quandoque basi integrâ diutiùs persistente.

Corolla nulla.

Stamina quatuor, (altero nunc sterili,) foliolis calycis opposita, iisdemque sæpissimè inserta, in plerisque juxta apicem, quandoque prope medium v. basin; rarò hypogyna; calycem nunquam superantia.

Filamenta brevissima v. mediocria, rarissimè partim [48 cohærentia.

Antheræ adnatæ, biloculares, lineares, loculis per axin longitudinaliter dehiscentibus; rarò bipartitæ lobis respondentibus vicinarum connatis loculumque unicum tandem bivalvem efformantibus, altero lobo in quibusdam deficiente.

Pollen triangulare, angulis subsecernentibus, quandoque ellipticum v. lunatum, rarò sphæricum.

Squamulæ Glandulæve hypogynæ v. quatuor foliolis calycis alternantes, distinctæ seu connatæ; v. pauciores et intùs secundæ, interdum nullæ, rarissimè staminuliformes.

Ovarium unicum, liberum, sæpè pedicellatum, pedicello rarissimè articulato, mono-di-poly-spermum quandoque biloculare: ovulis apice, basi v. latere ovarii affixis.

Stylus simplex, terminalis.

Stigma in plerisque indivisum, modò emarginatum rariùsve bifidum; sæpè obliquum, figurâ varium, plerumque glabrum, quandoque papulosum, hispidulum v. tomentosum.

Pericarpium, Nux, Samara v. *Drupa* monosperma raro disperma, vel *Folliculus* coriaceus seu ligneus, di-polyspermus basi, marginibusve suturæ seminifer; raro bilocularis, dissepimento libero parallelo bipartibili!

Semen sessile, ventricosum, v. sæpiùs compressum, in folliculatis sæpè alatum; exalbuminosum, apice *Chalazâ* venosâ insignitum, *Rhaphi* nullâ.

Embryo dicotyledoneus, raro polycotyledoneus, rectus, albus.

Radicula infera, brevis.

Plumula vix conspicua.

(Table facing page 48.)

PROTEACEÆ.

I. FRUCTUS CLAUSUS.

A. ANTHERÆ DISTINCTÆ.

a. ANTHERÆ A CALYCE LIBERÆ.

† *Flores dioici*, (organis imperfectis). *Stigma* femineorum obliquum, emarginatum, papulosum. Pag. Pag.

1. *Nux* exserta, (barbata): *squamis* capituli feminei subulatis. *Masculi flores* racemosi......... AULAX............ 39 (49)

2. *Nux* v. Samara *squamis* dilatatis strobili inclusa. *Masculi flores* capitati .... LEUCADENDRON 40 (50)

†† *Flores hermaphroditi*, rarò polygami dioici, *stigmate* tunc verticali.

α. *Antheræ* apicibus concavis calycis immersæ.

§ *Ovarium monospermum*. *Nux* subcrustacea v. *Samara*.

a. *Squamulæ* Glandulæve nullæ hypogynæ.

1. *Nux* lenticularis, hinc barbata v. *Samara* glabra. *Calyx* totus simul deciduus .... PETROPHILA ... 55 (67)

2. *Nux* ventricosa, undique æqualiter barbata. *Calyx* tubo gracili diutiùs persistenti.. ISOPOGON 58 (71)

b. *Squamulæ* v. Glandulæ quatuor hypogynæ.

‖ *Calyx* irregularis, labiatus, laciniis tribus (rarò omnibus) cohærentibus.

1. *Calyx* bipartibilis. Labii majoris laminæ staminiferæ cohærentes. *Stylus* persistens, subulatus............................ PROTEA 60 (74)

2. *Calyx* tubulosus. *Laminæ* staminiferæ distinctæ. *Stylus* deciduus, filiformis .... LEUCOSPERMUM 78 (95)

A. ANTHERÆ DISTINCTÆ—(*contin.*)

a. Antheræ a calyce liberæ—(*contin.*)

|| || *Calyx* laciniis quatuor distinctis (sæpiùs æquidistantibus).

α. *Capitulum* indefinitè multiflorum, subpaleaceum. *Involucrum* dum adsit imbricatum.

Pag. Pag.

1. *Nux* brevissimè pedicellata. *Paleæ* persistentes. *Receptaculum* convexum .... Serruria 92 (112)
2. *Nux* sessilis. *Paleæ* deciduæ, angustissimæ v. nullæ. *Receptaculum* planum .... Mimetes 86 (105)

β. *Involucrum* uniflorum v. definitè pauciflorum. *Paleæ* nullæ.

‡ *Squamulæ hypogynæ* a calyce toto deciduo liberæ.

* *Stigma* verticale. *Calyx* regularis.

1. *Nux* sessilis, nitens, basi integrâ. *Involucrum* fructiferum induratum, 4-ph., 4-flor. .... Nivenia 110 (133)
2. *Nux* pedicellata v. basi emarginata. *Involucrum* fructiferum non mutatum........ Sorocephalus 115 (139)

** *Stigma* obliquum, dilatatum. *Calycis* laciniâ quartâ sæpè majore .... Spatalla 119 (143)

‡ ‡ *Squamulæ hypogynæ* infra adnatæ basi persistenti calycis... Adenanthos ...125 (151)

§ § *Ovarium dispermum.* *Drupa* baccata, putamine osseo. *Stigma* obliquum. *Calyx* irregularis........ Guevina........138 (165)

β *Antheræ* exsertæ. *Stamina* medio v. basi calycis inserta v. hypogyna.

† *Glandulæ* hypogynæ distinctæ s. connatæ. v. *Stamina* quatuor sterilia. *Drupa* putamine osseo.

* *Drupa* exsucca, tomentosa. *Filamenta* basi calycis inserta. *Vaginula* hypogyna. *Flores* polygami .... Brabeium 137 (164)

* * *Drupa* baccata. *Flores* hermaphroditi.

1. *Glandulæ* hypogynæ carnosæ. *Stamina* medio calycis supra recurvi inserta. *Ovarium* pedicellatum .... PERSOONIA 133 (159)

2. *Glandulæ* hypogynæ staminuliformes. *Stamina* basi calycis supra angustati inserta. *Ovarium* sessile........ CENARRHENES 132 (158)

† † *Glandulæ* nullæ hypogynæ.

§ *Stamina* calyci inserta.

1. *Filamenta* distincta. *Stigma* unilaterale. *Ovarium* monospermum, trigonum (imberbe) .... AGASTACHYS ...132 (158)

2. *Filamenta* apice cohærentia. *Stigma* subtruncatum. *Ovarium* dispermum, teres .... SYMPHIONEMA 131 (157)

§ § *Stamina* receptaculo inserta. *Samara* aptera, 1-2-sperma. *Stigma* simplex... BELLENDENA ...139 (166)

b. ANTHERÆ ADNATÆ TUBO CALYCIS HYPOCRATERIFORMIS! *Nux* fusiformis, pedicellata; apice dilatato papposo FRANKLANDIA...130 (157)

B. ANTHERÆ COHÆRENTES, vicinarum lobis proximis loculum unicum constituentibus! tandem distinctæ.

α. *Calyx* regularis. *Antheræ* exsertæ, omnes bilobæ .... SIMSIA..........126 (152)

β. *Calyx* ringens. *Antheræ* inclusæ, laterales dimidiatæ; *Stamine* quarto sterili.

1. *Stigma* liberum. *Anthera* labii superioris biloba .... CONOSPERMUM 127 (153)

2. *Stigma* filamento sterili cohærens. *Anthera* media labii inferioris biloba .... SYNAPHEA 129 (155)

II. FRUCTUS DEHISCENS.

A. UNILOCULARIS.

a. OVARIUM DISPERMUM. *Fructus* quandoque monospermus.

† *Antheræ* apicibus concavis calycis immersæ. *Glandula* hypogyna unica dimidiata, v. nulla.

* *Glandula* nulla hypogyna. *Stigma* conicum. *Semen* apterum .... ANADENIA 139 (166)

* * *Glandula* hypogyna dimidiata, quandoque lobata.

1. *Folliculus* (coriaceus v. ligneus) loculo centrali. *Semina* alâ apicis dum adsit nucleo breviore .... GREVILLEA......140 (167)

2. *Folliculus* incrassato-ligneus, loculo excentrico. *Semina* alâ apicis nucleo longiore... HAKEA 149 (178)

A. UNILOCULARIS—(*contin.*)

a. OVARIUM DISPERMUM—(*contin.*)

†† *Antheræ* exsertæ, apicibus calycis revolutis. *Glandulæ* hypogynæ quatuor, distinctæ v. connatæ. Pag. Pag.

‡ *Involucrum* coloratum, deciduum, uni-multiflorum, receptaculo plano. *Semina* marginata. *Stigma* subulatum .... LAMBERTIA......157 (187)

‡‡ *Involucrum* nullum. *Flores* spicati.

a. *Semina* apice (solùm) alata.

1. *Folliculus* incrassato-ligneus, loculo excentrico. *Stigma* clavatum. *Flores* polygami .... XYLOMELUM ...159 (189)
2. *Folliculus* coriaceus, loculo centrali. *Stigma* subcylindraceum .... ORITES 159 (189)

β. *Semina* utrinque alata, marginata. *Stigma* clavatum. *Folliculus* ligneo-coriaceus RHOPALA.........160 (190)

b. OVARIUM TETRASPERMUM! *Calyx* regularis. *Antheræ* exsertæ. *Semina* apice alata. *Glandulæ* quatuor hypogynæ .... KNIGHTIA 163 (193)

c. OVARIUM POLYSPERMUM. *Calyx* irregularis, apicibus concavis staminiferis.

§ *Semina* apice alata.

* *Stigma* verticale, clavatum. *Glandula* hypogyna unica, semiannularis .... EMBOTHRIUM ...165 (195)

** *Stigma* obliquum, unilaterale.

1. *Glandula* nulla hypogyna. *Stigma* dilatatum, concavum. *Involucrum* (racemi) nullum OREOCALLIS ...165 (196)
2. *Glandula* unica hypogyna, subannularis. *Stigma* clavatum, convexum. *Involucrum* (racemi) deciduum .... TELOPEA.........166 (197)
3. *Glandulæ* tres hypogynæ, secundæ. *Stigma* dilatatum, concavum. *Calycis* foliola distincta .... LOMATIA.........168 (199)

§§ *Semina* basi alata! *Glandula* hypogyna unica dimidiata. *Stigma* dilatatum, concavum .... STENOCARPUS...170 (201)

B. BILOCULARIS, dissepimento libero, bifido.

1. *Amentum* paribus flosculorum tribracteatis .... BANKSIA 171 (202)
2. *Receptaculum commune planum;* involucro imbricato; flosculis indeterminatim confertis, paleis solitariis v. nullis .... DRYANDRA 179 (211)

1. AULAX. [49

Berg. Cap. 33. *Salisb. Parad.* 67.

CHAR. GEN. *Flores* dioici, organis imperfectis.

Masc. racemosi: *Calyx* tetraphyllus foliolis medio staminiferis.

Fem. *Stigma* obliquum, clavatum, hispidulum, emarginatum. *Nux* exserta, ventricosa, barbata, squamis capituli subulatis.

HABITUS. Frutices *glaberrimi*. Folia *integerrima*. Flores *terminales, unibracteati*. Masculi *in racemis aggregatis, nudis*. Feminei *in capitulo solitario, cincto foliolis intùs auctis appendiculâ aceroso-multifidâ, capitulo quasi abortivo racemis exterioribus maris analogo, (interdum florifero, fide* Cel. Salisburii.)

1. A. *pinifolia*, foliis filiformibus canaliculatis.

MASC. Pini foliis planta Africana Cyperi capitulis. *Herm. Afr.* 18. *Burm. Afr.* 193, *t.* 70, *f.* 3.

Pini folio planta Capensis floribus spicatis. *Raj. Hist.* 3, *App. p.* 247, *n.* 47.

Pini facie frutex africanus, Cyperi capitulis umbellatis. *Sher. in Raj. Hist.* 3, *Dendr. p.* 130.

Aulax pinifolia. *Berg. Cap.* 33.*

Leucadendron pinifolium. *D. Van Royen in Linn. Mant:* 36.* *Syst. Nat. ed.* xii, *t.* 2, *p.* 110.

Protea pinifolia. *Linn. Mant.* 187. (sed specimen maris *A. umbellatæ* habebat in Herb.) *Syst. Nat. ed.* xiii, *t.* 2, *p.* 117. *Thunb. Diss. n.* 20.* *Prod.* 26. *Willd. Sp. Pl.* 1, *p.* 515. *Lam. Illust. Gen.* 1, *p.* 237, *n.* 1244. *And. Repos.* 76, bona. *Poiret, Encyc. Botan.* 5, *p.* 651.

FEM. Scolymocephalus africanus foliis Rorismarini acutis. *Herm. Afr.* 20. *Raj. Hist.* 3, *Dendr. p.* 10.

Conophorus capensis pini folio. *Petiv. Gazoph.* 3, *n.* 458, *t.* 25, *f.* 7, 8*vo*, *p.* 40.

Lepidocarpodendron; foliis angustissimis, gramineis; [50 fructu cancellato; semine coronato. *Boerh. Lugd. Bat.* 2, *p.* 193, *c. tab.*

Leucadendron cancellatum. *Linn. Sp. Pl. ed.* 1, *p.* 91; *ed.* 2, *p.* 134; omiss. in Mant. et Syst. Veg. ed. xiii.

Protea bracteata. *Thunb. Diss. n.* 24,* *tab.* 1. *Prod.* 26. *Linn. Suppl.* 118. *Willd. Sp. Pl.* 1, *p.* 517. *Lam. Illust. Gen.* 1, *p.* 238, *n.* 1245. *Poiret, Encyc. Botan.* 5, *p.* 652.

Hab. In Africæ Australis montibus; prope Plattekloof, Hottentots-Holland, et alibi. (v. s. in Herb. plur.)

Obs. Pollen globosum.

2. A. *umbellata*, foliis planis spathulato-linearibus.

Masc. Protea aulacea. *Thunb. Diss. n.* 33,* *tab.* 2, bona. *Prod.* 26. *Willd. Sp. Pl.* 1, *p.* 520. *Lam. Illust. Gen.* 1, *p.* 237, *n.* 1243. *Poiret. Encyc. Botan.* 5, *p.* 651.

Fem. Protea umbellata. *Thunb. Diss. n.* 34.* *Prod.* 26. *Linn. Suppl.* 118. *Willd. Sp. Pl.* 1, *p.* 520. *Lam. Illust. Gen.* 1, *p.* 237, *n.* 1242. *And. Repos.* 248. *Poiret, Encyc. Botan.* 5, *p.* 650.

Hab. In Africæ Australis montibus, prope Prom. B. Spei; Taffelberg, Platte-kloof, &c. (v. s. in Herb. Banks.)

Obs. Pollen subglobosum, obtusissimè trigonum.

2. LEUCADENDRON.

Herm. Pluk. Linn. in Class. Plant. Conocarpodendra, *t.* 195, 197, 200, 202, 203, 204. *Boerh.* Protea. *Linn. Gen. Pl. ed.* 2, 5, 6. Conocarpos. *Adans. Famill.* Protea, Euryspermum, Chasme. *Salisb. Parad. Lond.*

Char. Gen. *Flores* dioici, organis imperfectis; capitati.

Fem. *Stigma* obliquum, clavatum, emarginatum, 51] hispidulum. *Nux* v. *Samara* monosperma, squamis (quandoque cohærentibus) strobili inclusa.

Habitus. Frutices, *rarò Arbores, sæpe sericeo-tomentosi.* Folia *integerrima.* Capitula *terminalia, solitaria; bracteis imbricatis foliisve verticillatis et subcoloratis plerumque cincta.*

Obs. The separation of sexes in the genus Protea of authors, obscurely suspected by Linnæus himself in his *Protea parviflora,* and afterwards more expressly by La-

marck in *P. pinifolia*, was first ascertained in *Aulax* and the present genus (as Mr. Dryander informs me) by our countryman Masson, during his last residence at the Cape of Good Hope, and is beautifully illustrated by that eminent botanical painter Mr. Francis Bauer, in his unpublished drawings preserved in the Banksian collection. Numerous observations on the same subject have also more recently been made by Dr. Roxburgh and Mr. Niven, who have bestowed much pains in ascertaining its limits, of which, as far as regards the African part of the family, Mr. Salisbury has given an accurate account in his Essay already quoted. The Dissertation of Thunberg, who was wholly unacquainted with this separation of sexes in these plants, is necessarily imperfect, and he has, in several cases, described the different sexes as distinct species; and thus also Bergius has founded his genus *Aulax* on the male of a species, whose female he had previously published as a *Leucadendron*. On the other hand, Jussieu, deceived by the resemblance in inflorescence, between *Brabejum* and the spiked species of Protea, has erroneously suspected these to be monoicous, while he has totally overlooked the truly dioicous nature of the present genus.

† Nux *ventricosa*, stylo *toto calyceque persistentibus*. [52

1. L. *argenteum*, arboreum, foliis lanceolatis argenteis: marginibus ramisque villosis, bracteis involucrantibus abbreviatis tomentosis, calycibus masculis sericeis.

Scolymocephalus Africana, foliis sericeis argenteis longis acutis. *Herm. Cat.*

Leucadendros Africana, arbor tota argentea, sericea, foliis integris. Atlas Tree. D. Herman. *Pluken. Phyt. t.* 200, *f.* 1, ramulus sine floribus nuce separatâ; fortè speciei distinctæ.

Conifera salicis facie, folio et fructu tomento sericeo candicante obductis, semine pennato. *Sloane in Philos. Trans.* 17, *p.* 664, strobilus cum fructu separato.

Frutex Æthiopicus conifer, foliis lanuginosis omnium maximis. *Breyn. Prod.* 2, *p.* 66.

Argyrodendros africana foliis sericeis et argenteis. *Com. Hort.* 2, *p.* 51, *t.* 26. *Raj. Hist.* 3, *Dendr. p.* 9.

Globularia Africana frutescens Thymeleæ folio lanuginoso. *Tournef. Inst.* 467?

Conocarpodendron; foliis argenteis, sericeis, latissimis. *Boerh. Lugd. Bat.* 2, *p.* 195, *c. tab.*

Scolymocephalus africanus, folio crasso nervoso sericeo. *Weinm. Phyt.* 4, *p.* 293, *t.* 900.

Brückm. Epist. Itin. 2, *p.* 8, *t.* 4, strobilus.

Protea foliis lanceolatis integerrimis acutis hirsutis nitidis. *Hort. Cliff.* 29. *Virid. Cliff.* 8. *Roy. Lugd. Bat.* 184. *Wachend. Ultraj.* 201.

Protea argentea *α*. *Sp. Pl. ed.* 1, *p.* 94.

Protea argentea. *Sp. Pl. ed.* 2, *p.* 137. *Mant.* 194. *Thunb. Diss. n.* 48.* *Prod.* 27. *Gært. Sem.* 1, *p.* 239, *t.* 51. *Willd. Sp. Pl.* 1, *p.* 529. *Lam. Illust. Gen.* 1, *p.* 237, *n.* 1236, *t.* 53, *f.* 1. *Poiret, Encyc. Botan.* 5, *p.* 648.

53] HAB. In Africâ Australi, ad radices lateraque montium, prope Prom. B. Spei. (v. s. in Herb. Banks. &c.)

OBS. Squamulas quatuor hypogynas, longas, angustolineares, in floribus masculis observavi: femineos nondum vidi.

2. L. *plumosum*, fruticosum, foliis lineari-lanceolatis muticis glabris subsericeisve: basi attenuatâ tortâ, involucris calycibusque masculis glabris: femineis persistentibus plumosis quadrifidis, nucibus cuneato-oblongis villosis.

MASC. Protea parviflora. *Linn. Mant.* 195.* *Syst. Veg. ed.* xiii, *p.* 119. *Thunb. Diss. n.* 40,* *tab.* 4, bona. *Prod.* 27. *Willd. Sp. Pl.* 1, *p.* 524. *Lam. Illust. Gen.* 1, *p.* 235, *n.* 1220. *Poiret, Encyc. Botan.* 5, *p.* 643.

FEM. Protea obliqua. *Thunb. Diss. n.* 39.* *Prod.* 27. *Linn. Suppl.* 117,* fide descriptionis, nullum enim specimen in herbario, monente Cel. Smith. *Willd. Sp. Pl.* 1, *p.* 524.

Protea plumosa. *Hort. Kew.* 1, *p.* 127.

HAB. In Africâ Australi, prope Fransche Hoek et alibi haud infrequens. (v. s. in Herb. Banks.)

Obs. Squamulæ nullæ hypogynæ in mare: femina ad anthesin haud observata.

*3. L. *retusum*, fruticosum, foliis oblongo-spathulatis glabris: basi attenuatis; callo apicis subretuso, ramis tomentosis, involucris pubescentibus, calycibus masculis glabris, femineis plumosis quadripartitis, nucibus glabris obovato-orbiculatis.

Hab. In Africæ Australis montibus prope Prom. B. Spei; Picket-Berg. (v. s. in Herb. Soc. Linn.)

Obs. Strobilus cum Nucibus et Calyce ad basin tabulæ 199. *Boerh. Lugd. Bat.* vel ad hanc vel ad sequentem speciem pertinere videntur.

*4. L. *spathulatum*, fruticosum, foliis oblongo-spathulatis: basi attenuatis; callo apicis acutiusculo recurvo ramisque glabris, calycis feminei tardiùs decidui laminis nudis, nucibus glabris latioribus quàm longis demum muticis. [54

Hab. In Africæ Australis planitiis elevatioribus arenosis, prope Promont. B. Spei. (v. s. in Herb. Hibbert.)

Obs. In Mare? squamulas quatuor longissimas hypogynas observavi.

*5. L. *sessile*, fruticosum, foliis lanceolato-oblongis glabris: basi obtusâ.

Hab. In Africâ Australi prope Promont. B. Spei. *D. Masson.* (v. s. in Herb. Banks.)

Obs. Squamulæ hypogynæ longissimæ, persistentes.

†† Nux *ventricosa v. lenticularis aptera, undique marginibusve pilosa.* Stylus *totus deciduus, basive solum remanenti.* Calyx *diù persistens quadripartitus.*

*6. L. *angustatum*, foliis lineari-spathulatis (passim angustatis) obtusis muticis concaviusculis ramisque glabris, strobili squamis conniventibus nucibusque pubescentibus subglobosis muticis, calycibus plumosis.

Hab. In Africâ Australi, prope Promont. B. Spei. *D. Masson.* (in Herb. D. Aiton vidi.)

Desc. *Frutex*, ramis strictis, divisis. *Folia* sparsa, frequentia, erecta, 8—9 lineas longa, obtusissima, ad apicem (vix callosum) sesquilineam lata, in eodem ramo passim dimidio angustiora. *Strobilus* subglobosus, magnitudine globuli sclopi minoris: *Squamis* ovatis exterioribus latioribus. *Nux* magnitudine seminis Viciæ, levissimè compressa, undique pube brevi induta, cincta calyce ad basin quadripartito vix longiore.

55] *7. L. *imbricatum*, foliis lanceolato-linearibus glabris imbricatis basi obtusis, squamis strobili dilatato-cuneatis retusis sericeis, nucibus undique comosis basi styli cuspidatis.

Protea Levisanus. *Herb. Linn.*

HAB. In Africâ Australi, prope Prom. B. Spei; Rode Zant. (v. s. in Herb. Banks. et Soc. Linn.)

OBS. Squamæ nullæ hypogynæ.

*8. L. *buxifolium*, foliis ovali-lanceolatis subimbricatis: adultis glabris, squamis strobili dilatato-cuneatis sericeis, nucibus undique comosis basi styli mucronatis.

Protea imbricata. *Wend. Hort. Herenh. tab.* 14? excl. syn.

HAB. In Africâ Australi. *D. Masson.* (v. s. in Herb. Banks.)

DESC. *Frutex* erectus, ramosissimus. *Rami* umbellati, tenuissimè tomentosi. *Folia* frequentia, erecto-imbricata, sessilia, concaviuscula, avenia, opaca, semiunguicularia; superiora tenuissimè pubescentia; floralia angustiora. MASC. *Capitulum* sessile magnitudine pisi. *Calyx* tubo unguibusque sericeis, laminis glabriusculis. *Squamulæ* quatuor hypogynæ longæ, lineares. FEM. *Capitulum* paulo majus. *Calycis* ungues laminæque sericeæ. *Squamulæ* nullæ hypogynæ. *Nux* ovata, calyce diù cincta.

OBS. I. Nimìs affine *L. imbricato*, figurâ foliorum præsertim distinguendum.

OBS. II. Icon *Wend.* suprà citata forsan diversæ speciei; foliis oblongis semuncialibus pilosis, strobilis longioribus, squamulis hypogynis: an potiùs ad priorem referenda?

9. L. *Levisanus*, foliis obovato-spathulatis obtusissimis: adultis glabris, ramulis pilosis, capitulis masculis sessilibus, nucibus undique comosis muticis.

Levisanus capensis serpylli folio. *Petiv. Gazoph.* 9, [56 *t.* 5, *f.* 7? mala.

Chrysanthemum Conyzoides Æthiopicum, capitulo aphyllo, Tithymali paralii foliis subrotundis, hiulculis in superficie conspicuis. *Pluk. Mant.* 47, *t.* 343, *f.* 9, bona.

Conocarpodendron; foliis subrotundis, brevissimis, capituli immaturi globosi parte inferiore fuscâ, mediâ aureâ, supremâ viridi. *Boerh. Lugd. Bat.* 2, *p.* 202, *c. tab.*

Brunia foliis oblongis incanis, florum capitulo ramulum terminante. *Burm. Afr.* 267,* *t.* 100, *f.* 2, Mas. bona.

Scolymocephalus seu Conocarpodendron, foliis brevissimis. *Weinm. Phyt.* 4, *p.* 296, *t.* 904, a, pessima quoad colores.

Protea fusca. *Linn. Sp. Pl. ed.* 1, *p.* 95.

Brunia Levisanus. *Linn. Sp. Pl. ed.* 2, *p.* 289.

Leucadendron Levisanus. *Berg. Act. Stockh.* 1766, *p.* 324.* *Berg. Cap.* 20,* Mas.

Protea Levisanus. *Linn. Syst. Nat. ed.* xii, *t.* 2, p. 111. *Mant.* 194,* quoad descriptionem, sed specimen in Herbario est feminæ L. imbricati. *Thunb. Diss. n.* 43.* *Prod.* 27. *Willd. Sp. Pl.* 1, *p.* 526. *Lam. Illust. Gen.* 1, *p.* 235, *n.* 1223. *Poiret, Encyc. Botan.* 5, *p.* 644. *Wend. Hort. Herenh. t.* 1, Mas.

Hab. In Africæ Australis campis sabulosis ericetisque, prope Prom. B. Spei. (v. s. in Herb. Banks.)

Obs. Squamulæ nullæ hypogynæ.

10. L. *tortum*, foliis spathulato-linearibus obtusis basi tortis: adultis glabris; junioribus ramulisque subsericeis, capitulis masculis pedunculatis, calycis laminis sericeis, nucibus undique comosis muticis.

Protea torta. *Thunb. Diss. n.* 31*? *Prod.* 26? *Willd. Sp. Pl.* 1, *p.* 519?

Protea cinerea. *Willd. Sp. Pl. p.* 521.* Fem. sec. [57 desc. exclus. syn.

Hab. In Africæ Australis depressis, prope Prom. B. Spei. (v. s. in Herb. Banks. et Soc. Linn.)

11. L. *cinereum*, foliis spathulato-linearibus argenteis, capitulis masculis sessilibus, nucibus obovato-cuneatis villosiusculis muticis.

Protea alba. *Thunb. Diss. n.* 32,* sec. desc. *Prod.* 26. *Willd. Sp. Pl.* 1, *p.* 520. *Lam. Illust. Gen.* 1, *p.* 236, *n.* 1233. *Poiret, Encyc. Botan.* 5, *p.* 647.

Protea cinerea. *Hort. Kew.* 1, *p.* 127. Fem. fid. spec. descript. in Herb. Banks.

Hab. In Africâ Australi, prope Prom. B. Spei. (v. s. in Herb. Banks.)

Obs. Squamulæ quatuor hypogynæ in utroque sexu.

12. L. *corymbosum*, foliis lineari-subulatis imbricatis glabris, strobili squamis acutis apice recurvis, nucibus subcompressis obcordatis margine pilosis.

Leucadendron corymbosum. *Berg. Act. Stockh.* 1766, *p.* 325.* *Berg. Cap.* 21,* Mas.

Protea corymbosa. *Thunb. Diss. n.* 28,* (desc. e mare præcipuè,) *tab.* 2, Mas. *Thunb. Prod.* 26. *Willd. Sp. Pl.* 1, *p.* 518. *Lam. Illust. Gen.* 1, *p.* 238, *n.* 1250. *Poiret, Encyc. Botan.* 5, *p.* 653.

Protea bruniades. *Linn. Suppl.* 117.* Mas. fid. spec. in illius Herb.

Protea corymbosa. *And. Repos.* 495, Fem.

Hab. In Africâ Australi, Drakenstein, Swartland, Rode Zant. (v. s. in Herb. Soc. Linn.)

Obs. Squamulæ quatuor hypogynæ in utroque sexu.

58] ††† Samara *glabra alata v. aptera.* Stylo (*fere toto*) *calyceque deciduis.* Squamæ *strobili distinctæ.*

13. L. *decorum*, foliis oblongis venosis callo recurvo: adultis glabris; junioribus ramisque sericeis; floralibus coloratis semiscariosis, strobili squamis extùs tomentosis: apice retuso parùm coarctato glabro, nucibus marginatis impresso-punctatis.

Protea laureola. *Lam. Illust. Gen.* 1, *p.* 234, *n.* 1214. *Poiret, Encyc. Botan.* 5, *p.* 641.* Fem. exclus. syn. Linnei, Thunbergii, Schraderi.

Hab. In Africâ Australi, prope Prom. B. Spei. (v. s. in Herb. Banks.)

14. L. *squarrosum,* foliis lanceolato-oblongis: callo recurvo anticè sulco lineari; adultis ramisque glaberrimis, amenti feminei oblongo-ovati squamis sursùm glabris dilatatis integris ciliatis: strobili recurvis undulatis.

Masc. Protea arcuata. *Lam. Illust. Gen.* 1, *p.* 234, *n.* 1215?

Protea obliqua α. *Poiret, Encyc. Botan.* 5, *p.* 642*? exclus. syn. Thunber. Linnei et Boerhaav.

Fem. Protea strobilina. *Linn. Mant.* 192.*

β. Conocarpodendron; folio rigido, crasso, angusto, cono laricis parvo. *Boerh. Lugd. Bat.* 2, *p.* 197, *c. tab.* Fem.?

Hab. In Africâ Australi, prope Prom. B. Spei. (v. s. in Herb. Soc. Linn.)

15. L. *concolor,* foliis spathulato-oblongis: callo anticè subrotundo; adultis glabris; floralibus masculis concoloribus, ramis pubescentibus, amenti feminei squamis retusis basi tomentosis, margine ciliatis.

Masc. Protea arcuata β. *Lam. Illust. Gen.* 1, *p.* 234, *n.* 1215?

Protea globosa. *And. Repos,* 307, bona. *Sims in* [59 *Bot. Mag.* 878.

Protea obliqua β. *Poiret, Encyc. Botan.* 5, *p.* 642? exclus. syn. Boerh. Thunb. Linnei, Willd.

Fem. Protea strobilina. *Schrad. Sert. Hanov.* 1, *p.* 7, *t.* 1.

Hab. In Africâ Australi, prope Prom. B. Spei. (v. s. in Herb. Soc. Linn.)

16. L. *grandiflorum,* foliis lanceolato-oblongis: callo apicis anticè subrotundo; adultis glabris; floralibus coloratis, ramis tenuissimè tomentosis, squamis amenti utriusque sexûs ovatis obtusiusculis glabris fucatis.

Masc. Euryspermum grandiflorum. *Salisb. Parad.* 105.
Hab. In Africâ Australi, prope Prom. B. Spei. (v. s.)

*17. L. *ovale*, foliis oblongo-ovalibus subaveniis: callo obtuso; adultis utrinque glabris margine tomentosis, strobili squamis lanceolato-ovatis acutis glabris, samaris apteris impunctatis extùs ventricosis.
Protea strobilina. *Thunb. Diss. n.* 44,* secund. descrip.
Hab. In Africâ Australi. *D. Masson.* Palmetta River. *Gul. Roxburgh M.D.* (v. s. in Herb. Banks.)

*18. L. *venosum*, foliis oblongo-lanceolatis venosis glabris: callo acuto, strobili squamis ovato-lanceolatis acutis ciliatis extra medium glabris, calycibus persistentibus, nucibus apteris.
Hab. In Africâ Australi. *Gul. Roxburgh M.D.* (v. s. in Herb. Soc. Linn.)

19. L. *decurrens*, foliis lanceolato-spathulatis basi attenuatis subdecurrentibus concaviusculis ramisque glabris, 60] calycis feminei tubo hirsuto, strobili squamis subrotundis demùm glabriusculis, samaris obcordatis alatis cinereis utrinque convexis.
Protea pallens. *Thunb. Diss. n.* 41,* secund. descrip. exclus. omnibus synonymis.
Protea chamelæa. *Lam. Illust. Gen.* 1, *p.* 237, *n.* 1240? exclus. syn. *Poiret, Encyc. Botan.* 5, *p.* 650*?
Hab. In Africâ Australi, prope Prom. B. Spei. (v. s. in Herb. Banks. et Soc. Linn.)

*20. L. *glabrum*, foliis lineari-lanceolatis aveniis: adultis ramisque glabris, strobili squamis obtusissimis subretusis tuboque calycis nudis, samaris alatis nigris planiusculis dilatatis.
Hab. In Africâ Australi, prope Prom. B. Spei. *Gul. Roxburgh M.D.* (v. s. in Herb. Soc. Linn.)

21. L. *strictum*, foliis linearibus mucrone subulato glabris, bracteis involucrantibus ovatis acutis capitulo florido longio-

ribus, strobili squamis dilatatis rotundatis glabris, samaris apteris impresso-punctatis.

MASC. Euryspermum salicifolium. *Salisb. Parad.* 75, bona.

Protea conifera. *And. Repos.* 541.

Protea conica. *Lam. Illust. Gen.* 1, *p.* 237, *n.* 1237?

Protea conifera A. *Poiret, Encyc. Botan.* 5, *p.* 649?

HAB. In Africâ Australi, ad ripas fluviorum et in humidis inter saxa, prope Stellenbosch et Rode Zant. *Gul. Roxburgh M. D.* (v. s. in Herb. Banks. et Soc. Linn.)

*22. L. *virgatum*, foliis linearibus acutis pellucido-marginatis ramisque glaberrimis: floralibus lineari-lanceolatis elongatis, strobili squamis ovatis integris incano-tomentosis, samaris alatis emarginatis.

HAB. In Africâ Australi, prope Promont. B. Spei. [61 (v. s. in Herb. Soc. Linn.)

OBS. Folia ramea basi torta; floralia intùs colorata rameis strobilisve duplo longiora; bracteæ involucrantes capitulo florido breviores. Strobilus ovatus magnitudine Avellanæ, squamis tomento vix nitente, superioribus apice sub-coarctatis.

*23. L. *adscendens*, foliis lineari-lanceolatis acutis: floralibus lanceolatis apice coarctatis coloratis concavis, strobili squamis ovatis integris incano-tomentosis, samaris alatis emarginatis, ramis adscendentibus, caulibus subdepressis.

Thymelæa capitata seu julifera angusto salicis folio promontorii Bonæ Spei. *Pluk. Mant.* 181, *t.* 229, *f.* 6, Mas. fide specim. in Herb. Pluk.

Conocarpodendron; folio angusto, rigido, breviore; cono parvo aureo, coronâ foliaceâ succincto. *Boerh. Lugd. Bat.* 2. *p.* 200. *c. tab.*?

Scolymocephalus minor. *Wein. Phyt.* 4, *p.* 295, *t.* 903. *a.*?

Protea pallens. *Linn. Mant.* 193.* Mas. fid. spec. in ejusd. Herb.

Protea conifera. *Linn. Mant.* 193.* Fem. fid. spec. in ejusd. Herb.

Hab. In Africæ Australis montibus, prope Promont. B. Spei. (v. s. in Herb. Banks.)

Obs. I. Strobilus ad basin tab. 9, Breyn. Cent. huc pertinet.

Obs. II. Protea pallens et conifera auctorum recentiorum ex eorum descriptionibus incompletis et ab altero solùm sexu desumptis vix extricandæ et æquo jure ad hanc speciem vel ad L. virgatum v. glabrum citari possint.

*24. L. *concinnum*, foliis lanceolato-oblongis obtusiusculis 62] aveniis ramisque glaberrimis: floralibus subconformibus semicoloratis, strobili squamis ovatis integris argenteo-tomentosis, samaris alatis emarginatis.

Hab. In Africæ Australis montibus. *D. Niven.* (in Herb. Hibb. vidi.)

Desc. *Frutex* decempedalis (*Niven.*) *Rami* stricti, glaberrimi. *Folia* frequentia, erecta, subimbricata, uncialia, marginibus angustissimis, semipellucidis, scabriusculis, parùm concava, callo apicis obtusiusculo: *floralia* sesquiuncialia, strobilo maturo vix duplo longiora.

25. L. *salignum*, foliis lanceolato-linearibus acutissimè mucronatis subsericeis: floralibus lanceolatis coloratis, strobili squamis tomentosis sursùm dilatatis retuso-bilobis margine glabris, samaris apice latiusculè margine angustissimè alatis.

Conocarpodendron; folio tenui, angusto, saligno; cono calyculato, coronâ foliaceâ succincto. *Boerh. Lugd. Bat.* 2, *p.* 204, *c. tab.*

Protea foliis lineari-lanceolatis integerrimis acutis. *Hort. Cliff.* 29, secund. specim. in Herb. Cliff. quod ramulus absque fructificatione.

Protea foliis lineari-lanceolatis integerrimis superioribus hirsutis nitidis. *Roy. Lugd. Bat.* 184.

Protea argentea β. *Linn. Sp. Pl. ed.* i, *p.* 94, exclus. syn. Breynii et Tournefortii.

Protea conifera α. *Linn. Sp. Pl. ed.* ii, *p.* 138, excl. syn.

Protea saligna. *Linn. Mant.* 194, Mas. exclus. syn.

Bergii et Breynii. *Lam. Illust. Gen.* 1, *p.* 236, *n.* 1235. *Poiret, Encyc. Botan.* 5, *p.* 648,* Fem.

Hab. In Africâ Australi, prope Promont. B. Spei, in montosis. (v. s. in Herb. Soc. Linn.)

26. L. *uliginosum,* foliis lanceolato-linearibus utrinque [63 argenteis tomento arctè adpresso: callo apicis acuto, ramis tomentosis, calycis feminei tubo hirsuto, squamis strobili sericeis dilatatis subundulatis obsoletè retusis, samaris apteris.

Frutex æthiopicus conifer foliis cneori salici æmulis. *Breyn. Cent.* 21, *t.* 9, excepto strobilo ad basin tabulæ, qui ad L. adscendens pertinet.

Protea saligna. *Thunb. Diss n.* 47,* secund. descrip.

Hab. In Africæ Australis uliginosis, prope Prom. B. Spei. (v. s.)

27. L. *floridum,* foliis lanceolato-linearibus sericeis suprà villosis: callo apicis acuto; floralibus subtùs ramisque hirsutis, calycibus masculis longitudinaliter pilosis, strobili squamis tomentosis apice dilatatis integris, samaris apteris.

Thymelæa capensis sericeis longioribus et acutis foliis caule geniculato piloso. *Pluk. Phyt.* 181, *t.* 229, *f.* 4, fide specim. in ejus Herb.

Protea saligna mas et fem. *And. Rep.* 572?

Hab. In Africâ Australi, prope Promont. B. Spei, in paludosis ad radicem Montis Wynberg. *Gul. Roxburgh M. D.* (v. s. in Herb. Banks. et Mus. Brit.)

†††† Squamæ *strobili connatæ.* Samara *foliaceo-compressa, glabra.* Folia *aliqua vel omnia filiformia.*

*28. L. *platyspermum,* foliis superioribus lineari-spathulatis: callo obtuso, strobili squamis duplicatis longitudinaliter accretis: rimis semicircularibus, samaris duplo latioribus quàm longis.

Hab. In Africâ Australi, prope Promont. B. Spei. Hout Hoek. *And. Auge.* (v. s. in Herb. Banks.)

Desc. *Frutex* glaber. *Folia* inferiora filiformia, canaliculata, sesquiuncialia; superiora plana, vix longiora.

64] Masc. *Amentum* ovatum, bracteis lanceolatis, sericeis subtensum. *Laminæ* calycis glabræ. *Stigma* clavatum.

Fem. *Amentum* oblongum: *Squamis* glabris connatis. *Ungues* calycis villosæ. *Laminæ* glabræ. *Stigma* dilatatum, obliquum, papulosum. *Strobilus* oblongus, quandoque ovatus, rimis transversis semicirculum sub-æquantibus. *Samara* cinerea, lævis.

29. L. *comosum*, foliis superioribus spathulato-lanceolatis obtusis mucronatis rugoso-striatis, strobilis oblongis: squamis basi connatis suprà distinctis marginibus inflexis sub-barbatis, samaris subrotundis nigris.

Protea comosa. *Thunb. Diss. n.* 25,* secund. descript. folior. *Prod.* 26. *Willd. Sp. Pl.* 1, *p.* 517. *Lam. Illust. Gen.* 1, *p.* 238, *n.* 1254. *Poiret, Encyc. Botan.* 5, *p.* 655.

Hab. In Africâ Australi, pone Montes Swellendam. *D. Masson.* (v. s. in Herb. Banks. et D. Aiton.)

*30. L. *æmulum,* foliis superioribus lanceolato-spathulatis acutis rugoso-striatis, strobilis ovatis: squamis basi cohærentibus suprà distinctis marginibus recurvis imberbibus, samaris subrotundis nigris.

Protea incurva. *And. Repos.* 429, fortè Mas hujus speciei, quamvis folia superiora vix duplo latiora.

Hab. In Africâ Australi. *Gul. Roxburgh M. D.* (v. s. in Herb. Soc. Linn.)

31. L. *abietinum,* foliis omnibus filiformibus canaliculatis obtusiusculis lævibus patulis arcuato-incurvis, strobili squamis marginibus axibusque infrà connatis suprà distinctis bilobis.

65] Protea teretifolia. *And. Repos.* 461, femina et ramulus ad 4. mas.

Hab. In Africâ Australi, prope Prom. B. Spei, frequens. (v. s. in Herb. Banks. et Soc. Linn.)

*32. L. *scabrum,* foliis omnibus filiformibus canaliculatis acutis imbricatis rectiusculis margine scabris pilosisve, strobili squamis marginibus axibusque infrà connatis apicibus distinctis bilobis.

Hab. In Africâ Australi. (v. s. in Herb. Hibbert.)

††††† *Dubiæ tribus. Feminis adhucdum incognitis.*

33. L. *sericeum,* foliis lanceolatis sericeis semiunguicularibus, caule erecto, capitulis sessilibus solitariis aggregatisve turbinatis, calycibus masculis longitudinaliter pubescentibus: tubo gracili infernè stylo cohærente.

Protea sericea. *Linn. Suppl.* 118,* fide specim. in ejus Herb.

Protea sericea. *Thunb. Diss. n.* 46,* sed caulis erectus videtur.

Hab. In Africâ Australi, prope Promont. B. Spei. (v. s. in Herb. Banks.)

34. L. *Globularia,* foliis lineari-spathulatis glabris aveniis: callo obtusissimo; basi attenuatâ tortâ, capitulis sessilibus depresso-globosis: bracteis tomentosis, calycibus masculis pubescentibus, stigmate clavato.

Protea globularia. *Lam. Illust. Gen.* 1, *p.* 236, *n.* 1232, *t.* 53, *f.* 2. *Poiret, Encyc. Botan.* 5, *p.* 647? exclus. syn. Thunbergii.

Desc. *Fruticulus* erectus ramosissimus, ramis strictis, ultimis sericeis. *Folia* sparsa, 8—9 lineas longa, inferiora ramorum breviora, capitulum subtendentia confertiora. *Bracteæ* involucrantes capitulo dimidio breviores, ovatæ, [66 arctè imbricatæ. *Calyx* tubo gracili unguibusque villosis, laminis glabris. *Ovarium* nullum. *Stylus* villosus. *Squamulæ* quatuor, lineares, longæ, basi styli infrà adnatæ.

*35. L. *pubescens,* foliis spathulato-linearibus obtusis obliquis: adultis pubescentibus; junioribus sericeis, ramis villosis, involucris capitulo globoso sessili brevioribus tomentosis, calycibus stylisque pubescentibus.

Hab. In Africâ Australi. *Gul. Roxburgh M.D.* (v. s. in Herb. Soc. Linn.)

Obs. Quam maximè affine præcedenti.

*36 L. *ericifolium*, foliis acerosis glabris semiunguicularibus, capitulis corymbosis paucifloris, calycibus tomentosis.

Hab. In Africâ Australi. *Dom. J. Roxburgh.* (v. s. in Herb. Lambert. et Soc. Linn.)

Desc. *Frutex* erectus, ramosissimus, ramis rubicundis, ramulis tenuissimè tomentosis. *Folia* frequentia, erecta, imbricata, mutica, concaviuscula. *Capitula* breviter pedunculata, *Involucro* breviore sericeo subtensa. *Calyx* tubo gracili. *Ovarium* nullum. *Stylus* glaber. *Stigma* clavatum. *Squamulæ* nullæ intra calycem.

*37. L. *crassifolium*, foliis cuneato-obovatis obtusissimis glaberrimis crassis aveniis (3-uncialibus) basi attenuatis, capitulis globosis, bracteis propriis lanatis, calycibus glabris.

Hab. In Africâ Australi. *D. Masson.* (v. s. in Herb. Banks.)

Desc. *Rami* glaberrimi, glauci, crassitie digiti minimi. *Folia* frequentia, glauca, rigida, sesquiunciam lata, callo 67] subrotundo, acutiusculo, marginibus subsimplicibus per lentem minutè crenulatis, novellis ciliatis. *Capitulum* magnitudine cerasi maximi. *Calycis Tubus* cylindraceus. *Laminæ* lineares, planiusculæ, unguesque recurvæ. *Stylus* glaber. *Stigma* oblongo-clavatum.

An hujus generis?

*38. L. *cartilagineum*, foliis ovali-spathulatis obtusissimis: callo subtruncato: aveniis cartilagineis glaberrimis; basi attenuatâ lineari, capitulis globosis subpedunculatis, bracteis calycibusque tomentosis.

Hab. In Africâ Australi. (v. s. in Herb. Soc. Linn. et D. Hibbert.)

Desc. *Frutex* erectus, ramulis tenuissimè tomentosis. *Folia* vix uncialia, siccatione venis obsoletis depressis. *Capitulum* magnitudine cerasi minoris, pedunculo brevissimo bracteisque villosis. *Calyx* quadrifidus. *Stylus* glaber. *Stigma* oblongo-clavatum.

An hujus generis?

3. PETROPHILA.

ATYLI species. *Salisb. Parad.*

GEN. CHAR. *Calyx* quadrifidus, totus simul deciduus. *Stylus* basi persistenti. *Stigma* fusiforme, apice attenuato. *Squamulæ* nullæ hypogynæ. *Strobilus* ovatus. *Nux* lenticularis, hinc comosa, v. *Samara* basi barbata.

HABITUS. Frutices *rigidi*. Folia *glabra, varia, filiformia v. plana, indivisa, lobata v. pinnatifida, quandoque in eodem frutice diversiformia.* Amenta *ovata v. oblonga, terminalia et axillaria, nunc aggregata.* Genus, posthac, speciebus increscentibus, dividendum, phalangibus infra propositis [68 genera futura indicantibus.

ETYM. Πετρος et φιλεω. Hi frutices enim semper in saxosis apricis proveniunt.

OBS. Mr. Salisbury has united such of the New Holland Proteæ as he had seen, into one genus, which he calls *Atylus;* a name meant to express the want of those bodies that usually surround the ovarium, in this order, and which he chooses to term *calli:* but as I conceive they are certainly secreting organs, the name on this ground would be exceptionable: my chief reason however for not adopting it, either for the present or the following genus, is, that the whole of his essential character does not apply to either of them. In his secondary character he has also considered them as monoicous, a mistake into which he has probably been led, not only from the striking similarity between the strobili of *Petrophila* and *Leucadendron*, but also from the style of the former remaining for some time unwithered after the calyx has fallen off. In one species he has even described the relative situation of the sexes; regarding the terminating amentum of *P. pulchella* as female, and the lesser ones, which frequently though not always surround

it, as male; but that this is not the case is proved by Cavanilles' figure of the species, in which all the amenta are in fruit, and a specimen in the same state may be seen in Sir Joseph Banks's Herbarium.

† Stigma *articulatum, articulo inferiore angulato, glabro, superiore tomentoso.* Nux *lenticulari-compressa, intùs marginibusque comosa.* Folia *filiformia indivisa.*

*1. P. *teretifolia,* foliis teretibus exsulcis, squamis strobili enervibus, stigmatis articulo superiore stuposo triplo longiore.

69] HAB. In Novæ Hollandæ orâ australi, Lewin's Land. (ubi v. v.)

*2 P. *filifolia,* foliis teretibus exsulcis, squamis strobili nervosis orbiculatis, stigmatis articulo superiore barbato vix duplo longiore.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; in collibus saxosis. (ubi v. v.)

*3. P. *acicularis,* foliis filiformibus suprà obsoletè sulcatis, squamis strobili nervosis ovatis.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; in campis collibusque sterilibus. (ubi v. v.)

†† Stigma *inarticulatum, hispidiusculum.* Nux *lenticulari-compressa, intùs marginibusque comosa.* Strobilus *squamis distinctis.* Folia *filiformia bipinnatifida.*

*4. P. *rigida,* foliis triternatis: laciniis divaricatis, calycibus barbatis: laminarum apiculis glabris.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; in collibus saxosis. (ubi v. v.)

5. P. *pulchella,* foliis trifido-bipinnatis: laciniis erectis, calycibus sericeis: laminarum apicibus tomentosis.

Protea pulchella. *Schrad. Sert. Hanov.* ii. *p.* 15.* *t.* 7. *Willd. Sp. Pl.* 1, *p.* 507. *Cavan. Anal.* 1, *p.* 237.* *Ic.* 6, *p.* 33, *t.* 550. *Sims, Bot. Mag.* 796.

Protea fucifolia. *Salisb. Prod.* 48.

Protea dichotoma. *Cavan. Anal.* 1, *p.* 239.* *Ic.* 6, *p.* 34,* *t.* 551.

HAB. In Novæ Hollandiæ orâ orientali, prope Port Jackson; in arenosis inter saxa. (ubi. v. v.)

*6. P. *fastigiata,* foliis trifido-bipinnatis: laciniis erectis [70 fastigiatis teretiusculis muticis, calycibus glabris, strobilis terminalibus sessilibus: squamis lanatis.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; in ericetis aridis elevatioribus. (ubi. v. v.)

*7. P. *pedunculata,* foliis tripinnatifidis: laciniis canaliculatis divaricato-patulis, calycibus glabriusculis, strobilis pedunculatis: squamis glabris.

HAB. In Novæ Hollandiæ orâ orientali, prope Port Jackson; in montibus saxosis. (ubi v. v.)

††† Strobilus *squamis connatis.* Samara *foliacea, dilatata.* Stigma *inarticulatum, hispidiusculum.* Folia *plana, bipinnatifida.*

*8. P. *diversifolia,* foliis bi-tripinnatifidis planis: laciniis mucronatis, calycibus barbatis, strobilis axillaribus pedunculatis: squamis lanatis cohærentibus.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; in collibus saxiosis. (ubi v. v.)

†††† Strobilus *squamis distinctis.* Samara *planiuscula.* Folia *plana, ternatim divisa.*

*9. P. *squamata,* foliis trifidis: lobis lineari-lanceolatis; lateralibus sæpiùs bi-trifidis, strobilis axillaribus sessilibus: squamis apice scariosis glabris.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; in ericetis collibusque aridis. (ubi v. v.)

*10. P. *trifida,* foliis trifidis: lobis spathulato-lanceolatis sæpissimè indivisis, strobilis axillaribus sessilibus: squamis apice sericeis.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; [71 in collibus apricis sterilibus. (ubi v. v.)

4. ISOPOGON.

ATYLI species. *Salisb. Parad.*

GEN. CHAR. *Calyx* quadrifidus, tubo gracili, diutiùs persistente. *Stylus* totus deciduus. *Stigma* fusiforme, v. cylindraceum. *Squamæ* nullæ hypogynæ. *Nux* sessilis, ventricosa, undique comosa.

HABITUS. Frutices *rigidi.* Folia *glabra, plana v. filiformia, divisa v. integerrima.* Capitula *terminalia, rarò axillaria.* Floribus *modò densissimè imbricatis strobilo globoso; modò fastigiatis receptaculo communi planiusculo subinvolucrato, paleis deciduis congestis.* Genus distinctum, præcedenti proximum, posthac forsan in duo dividendum, ratione inflorescentiæ secundum quam species infrà distributæ sunt, in duas phalanges habitu parùm diversas.

ETYM. Ισος et πογον, ob nuces undique æqualiter barbatas; quâ notâ a *Petrophilâ* facilè distinguendus.

† Strobilus *globosus; squamis densissimè imbricatis, tardiùs deciduis.*

*1. I. *teretifolius,* foliis bi- v. triternatis filiformibus exsulcis, ramulis tomentosis, calycis tubo sericeo: laminis longitudinaliter barbatis.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; in ericetis collibusque saxosis. (ubi v. v.)

2. I. *anethifolius,* foliis pinnatifidis bipinnatifidisque filiformibus suprà sulcatis: laciniis erectiusculis, ramis glabris, calycis tubo pubescente: laminis infrà glabris apice barbato.

[72] Protea anethifolia. *Salisb. Prod.* 48.

Protea acufera. *Cavan. Anal.* 1, *p.* 236.* *Ic.* 6, *p.* 33, *t.* 549.

HAB. In Novæ Hollandiæ orâ orientali, prope Port Jackson; in ericetis. (ubi v. v.)

*3. I. *formosus,* foliis bipinnatifidis subtriternatis filiformibus suprà canaliculatis: laciniis divaricatis, ramulis tomentosis, calycibus glabris: laminis apice pilosiusculis.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; in collibus saxiosis. (ubi v. v.)

4. I. *anemonifolius*, foliis trifido-pinnatifidis bipinnatifidisve: laciniis linearibus planis patenti-erectis subtùs lævibus, strobili squamis stuposis.

Protea anemonifolia. *Salisb. Prod.* 48. *Sims, Bot. Mag.* 697. *And. Repos.* 332.

Protea tridactylites. *Cavan. Anal.* 1, *p.* 235.* *Ic.* 6, *p.* 33,* *t.* 548.

HAB. In Novæ Hollandiæ orâ orientali, prope Port Jackson; in ericetis saxosis. (ubi v. v.)

*5. I. *ceratophyllus*, foliis trifido-bipinnatifidis: laciniis linearibus planis divaricato-patulis utrinque striatis mucronatis; floralibus basi dilatatis, strobili squamis glabratis.

HAB. In Novæ Hollandiæ orâ australi, prope Port Phillip; in campis et collibus. (ubi v. v.)

*6. I. *trilobus*, foliis cuneatis planis trilobis: basi attenuatis petiolatis; lobis integerrimis, ramulis tomentosis.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; [73 in ericetis siccis. (ubi v. v.)

*7. I. *longifolius*, foliis lineari-lingulatis: superioribus integerrimis; inferioribus passim trifidis, calycibus sericeis, stigmate glabro.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; in collibus saxosis. (ubi v. v.)

†† *Receptaculum commune planum v. convexiusculum, paleis deciduis.*

*8. I. *cuneatus*, foliis oblongo-cuneatis obtusissimis, involucri bracteis tomentosis, calycibus glabris, stigmate fusiformi.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land, *D. A. Menzies.* (v. s. in Herb. Banks.)

*9. I. *attenuatus*, foliis elongato-oblongis mucronulatis basi attenuatis, ramis bracteisque involucrantibus glabris, capitulis solitariis, calycis laminis apice barbatis, stigmate cylindraceo.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; in collibus saxosis. (ubi v. v.)

*10. I. *polycephalus*, foliis lineari-oblongis mucronulatis, ramulis tomentosis, capitulis subaggregatis: bracteis omnibus lanatis, stigmate cylindraceo.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; in collibus saxosis. (ubi v. v.)

*11. I. *buxifolius*, foliis ovatis sessilibus acutis: apicibus
74] recurvis, caulibus proliferis, capitulis solitariis foliis obvallatis; bracteis subulatis, stigmate fusiformi.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; in ericetis elevatioribus subhumidis. (ubi v. v.)

*12. I. *axillaris*, foliis cuneato-lingulatis mucronulatis, capitulis axillaribus paucifoliis; bracteis involucrantibus ovatis imbricatis, calycis laminis longitudinaliter barbatis, stigmate fusiformi.

HAB. In Novæ Hollandiæ orâ australi, Lewin's Land; in collibus saxosis. (ubi v. v.)

5. PROTEA.

Linn. Gen. Pl. ed. i. *Class. Plant.* Leucadendron. *Linn. Gen. Pl. ed.* ii, v, *et* vi. Proteæ sp. *Linn. Syst. Veg.* xiii. *Thunb. Diss. Juss. Gen.* Erodendrum. *Salisb. Parad.*

GEN. CHAR. *Calyx* bipartibilis, inæqualis, labii latioris laminis staminiferis cohærentibus. *Stylus* subulatus. *Stigma* angustius, cylindraceum. *Nux* undique barbata, stylo persistenti caudata. *Receptaculum* commune, paleis abbreviatis persistentibus. *Involucrum* imbricatum, persistens.

HABITUS. Frutices *modò proceriores et quandòque arbo-*

rescentes, modò subacaules. Folia *integerrima.* Capitula *terminalia, rariùsve lateralia :* Receptaculo *planiusculo, nunc convexo, sæpissimè glabro, paleis quandòque connateis alveolato :* Involucro *magno, colorato, turbinato v. hemisphærico :* Calycis *labio latiore sæpè* 2—3-*aristato.*

† *Capitula terminalia.* [75

1. P. *Cynaroides,* foliis subrotundis petiolatis, involucris sericeis; bracteis interioribus acutis imberbibus, stylo infra medium pubescenti.

Scolymocephalos Africana lato rotundo glabro folio, cono maximo sericeo candido. *Herm. Cat. Mt. Raj. Hist.* 3, *Dendr. p.* 9.

Cinaroides frutex folio subrotundo rigido e Monte Tabulari. *Petiv. Mus.* 374.

Lepidocarpodendron; folio subrotundo, rigido, in pedunculo longo, crasso; flore maximo, purpureo. *Boerh. Lugd. Bat.* 2, *p.* 184,* *c. tab.* bona.

Scolymocephalos africanus folio lato rotundo. *Weinm. Phyt.* 4, *p.* 287, *t.* 892.

Leucadendron foliis subrotundis patentissimis petiolatis, foliolis calycinis carinatis. *Wachen. Ultraj.* 204.

Leucadendron cinaroides α. *Linn. Sp. Pl. ed.* i, *p.* 92, *ed.* ii, *p.* 135, *Berg. Act. Stockh.* 1766, *p.* 319.

Protea cynaroides. *Linn. Mant. p.* 190.* *Syst. Veg.* xiii, *p.* 118. *Thunb. Diss. n.* 59.* (exclus. syn. Lepidocarpodendron, &c. Boerh. Lugd. Bat. 2, p. 199, c. tab.) *Thunb. Prod.* 28. *Lam. Illust. Gen.* 1, *p.* 234, *n.* 1209. *Willd. Sp. Pl.* 1, *p.* 534. *And. Repos.* 288. bona. *Poiret, Encyc. Botan.* 5, *p.* 639. *Sims, Bot. Mag.* 770.

Hab. In Africâ Australi, ad latera montium prope Promont. B. Spei. (v. v. in Hort. var.)

*2. P. *latifolia,* foliis late-ovatis semicordatis sessilibus, involucro sericeo-tomentoso; bracteis interioribus angustatis apice dilatato barbato, calyce tomentoso : aristis hirsutis longitudine laminarum, stylo pubescenti.

Hab. In Africâ Australi. *Gul. Roxburgh M. D.* in [76 arenosis Zwartberg. *D. Niven.* (v. s. in Herb. Hibbert. et Lambert.)

Desc. *Frutex* 6—8 pedes altus. *Rami* tenuissimè tomentosi. *Folia* obtusissima, callo nullo prominulo, marginata, venosa, 3—4 uncias longa, 2—3 uncias lata, adulta glabra marginibus quandòque lanatis. *Involucrum* folia superiora superans, turbinatum, pugno majus: *Bracteis* obtusis, ciliatis; exterioribus latè ovatis; mediis oblongis; intimis elongatis, ungue lineari, laminâ oblongâ. *Calyx* ferè triuncialis, sericeo-tomentosus, labio latiore triaristato, aristis hirsutis, villis patulis, terminalibus præsertim purpureis. *Stylus* angulato-compressus, pube brevi adpressa subsericeus, apice glabro, curvato. *Stigma* subulatum, apice obtusiusculo.

*3. P. *compacta,* foliis oblongo-ovatis cordatis marginatis: callo apicis prominulo, involucro sericeo-tomentoso ciliato imberbi, calycis aristis longitudine laminarum, stylo glabro apice curvato, stigmatis apice conico-incrassato.

Hab. In Africæ Australis montosis, Hout Hoek. *D. Masson.* (v. s. in Herb. Banks.)

4. P. *longiflora,* foliis ovato-oblongis sessilibus basi subcordatis simplicibusve, ramis tomentosis, involucro sericeo; bracteis intimis elongatis sericeo-ciliatis, calycis aristis brevissimis, stylo glabro involucro longiore.

Conocarpodendron; folio subrotundo, crasso, rigido, valdè nervoso; cono longo, variegato, ex rubro et flavo; flore aureo. *Boerh. Lugd. Bat.* 2, *p.* 199, *c. tab.* bona respectu capituli, foliis vix convenientibus et potiùs ad P. *compactam* v. *latifoliam* pertinentibus: strobilo nucibus et flosculo ad calcem tabulæ jamjam ad *Leucadendron retusum* relatis.

?? Scolymocephalus foliis subrotundis glabris. *Weinm. Phyt.* 4, *p.* 294, *tab.* 902, b. a Boerh. icone mutuata omisso tamen strobilo.

Leucadendron, foliis subsessilibus cordato-ovatis imbricatis glabris. *Wachend. Ultraj.* 204. charactere ab icone Boerh. desumpto.

Protea longiflora. *Lam. Illust. Gen.* 1, *p.* 234, *n.* 1211, *Poiret, Encyc. Botan.* 5, *p.* 640.*

Protea lacticolor. *Salisb. Parad.* 27.

Protea ochroleuca. *Smith, Exot. Bot.* 2, *p.* 43, *t.* 81.

Hab. In Africæ Australis montibus, prope Prom. B. Spei. (v. v. in Hort. Reg. Kew.)

*5. P. *coccinea,* foliis obovatis obtusissimis sessilibus venosis ramisque glabris, involucri bracteis interioribus spathulatis apice barbatis, stylo glabro, calycis aristis ferè longitudine laminarum: margine pilosis; apice imberbibus.

Hab. In Africæ Australis montibus, prope Promont. B. Spei, Devil's Head: solo fertiliori. *D. Niven.* (v. s. in Herb. Hibbert.)

Desc. *Frutex* 4—5 pedes altus. *Rami* crassitie digiti. *Folia* lævia, glauca, per lentem punctis minutissimis depressiusculis conspersa; dum 4 uncias longa, 2—3 uncias lata; superiora basi quandòque semicordata; summa capitulum æquantia. *Involucrum* sessile, solitarium, turbinatum, 4—5-unciale, bracteis extùs demum glabriusculis; interiorum barbâ marginali, copiosâ, longâ, persistenti. *Calyx* inclusus, 2½ uncias longus; *Unguibus* hirsutis; *Laminis* dorso glabris, margine pilosis; *Aristis* vix longitudine laminarum. *Stylus* compressus. *Stigma* subulatum; inde exsulcum a stylo absque manifestâ curvaturâ continuum.

6. P. *speciosa,* foliis obovato-oblongis basi angustatis [78 ramisque glabris, involucri bracteis omnibus sericeis: interioribus apice subdilatatis mediisque barbatis, stylo pubescenti, aristis calycis apice lanatis.

Scolymocephalus Africana foliis longis glabris, cono sericeo; squamis rubigineâ villosâ cristâ ornatis. *Herm. Cat. Mt. Raj. Hist.* 3, *Dendr. p.* 9.

Lepidocarpodendron; folio oblongo, viridi, limbo rubro ornato; squamarum apice, et margine, lanuginosis. *Boerh. Lugd. Bat.* 2, *p.* 185. *c. tab.*

Scolymocephalus foliis longis, seu Tulipifer latifolius. *Weinm. Phyt.* 4, *p.* 288, *t.* 893, a. bona.

Scolymocephalus Africanus foliis angustis villosis. *Weinm. Phyt.* 4, *p.* 289, *t.* 894?

Bruckm. Epist. Itin. 2, *p.* 8, *t.* 3, capitulum.

Leucadendron speciosum. *Linn. Mant. p.* 36.* excl. syn. Clusii.

Protea speciosa. *Linn. Mant. p.* 191.

Protea Lepidocarpodendron β. *Linn. Syst. Veg.* xiii, *p.* 118.

Protea barbata. *Lam. Illust. Gen.* 1, *p.* 236, *n.* 1228.

Protea speciosa latifolia. *And. Repos.* 110, fortè huc pertinet monente D. Bellenden Ker; at pessima figura.

Protea speciosa. *Sims, Bot. Magaz.* 1183.

Hab. In Africæ Australis montibus, prope Prom. B. Spei. (v. v. in Monte Tabulari.)

*7. P. *macrophylla,* foliis elongato-oblongis marginatis venosis glabris basi subattenuatis, involucri bracteis omnibus tomentosis; intimis lingulatis imberbibus, calycis aristis hirsutis, stylo exsulco infra medium pubescente: apice curvato.

79] Hab. In Africà Australi, ad latera Montium Attaquas Kloof. *D. Niven.* (v. s. in Herb. Hibbert.)

Desc. *Frutex* validus, 8—10 pedes altus. (*Niven.*) *Rami* glabri apice tomento brevissimo quasi rore canescenti obducti. *Folia* basi parùm attenuatâ tortâ; superiora longiora, involucrum longè superantia, spithamea, ultra pollicem lata. *Involucrum* bracteis omnibus obtusis incanis; extimis ovatis; mediis oblongis; intimis apice haud dilatato. *Calyx* involucro parùm longior; unguibus laminisque tomento albo villisque concoloribus patulis: *Aristis* longitudine laminarum, tomento albo villisque longis, patulis, nigro-purpureis, terminalibus subcrispatis.

8. P. *formosa,* foliis angusto-oblongis venosis obliquis: basi simplici; marginibus ramisque tomentosis, involucri bacteis ciliatis; intimis lingulatis imberbibus, calycibus aristisque tomentosis, stylo glabro apice curvato, stigmate apice incrassato.

Protea coronata. *And. Repos.* 469.

Erodendrum formosum. *Salisb. Parad.* 76.

Hab. In Africâ Australi. *D. Masson.* (v. s. in Herb. D. Aiton, e Hort. Reg. Kew.)

Obs. Affinitate proxima *P compactæ,* foliis præsertim diversa.

9. P. *melaleuca,* foliis lineari-lingulatis marginatis ciliatis, ramis pilosiusculis, involucris elongato-turbinatis: bracteis albociliatis; exterioribus squarrosis; interioribus conniventibus spathulatis dorso nigro-tomentosis.

Lepidocarpodendron; folio saligno, viridi; nervo et margine flavo; cono longo, superiore parte maximè clauso. [80 *Boerh. Lugd. Bat.* 2, *p.* 189,* *c. tab.*?

Scolymocephalus seu Lepidocarpodendron frutice conifero. *Weinm. Phyt.* 4, *p.* 291, *t.* 898? diversa tamen bracteis intimis viridibus fortè e descriptione in Cod. Witsen. pictis.

Protea coronata. *Lam. Illust. Gen.* 1, *p.* 236, *n.* 1227? exclus. syn. priore Boerhaavii. *Poiret, Encyc. Botan.* 5, *p.* 645? desc. conveniente.

Protea speciosa nigra. *And. Repos.* 103.

Protea Lepidocarpon. *Ker in Bot. Mag.* 674.

Hab. In Africâ Australi, prope Prom. B. Spei.

Obs. Species, ex figuris recentioribus huc citatis, nec non e pulcherrimâ ineditâ D. Franc. Bauer, quæ omnes inter se exactè conveniunt, distincta videtur, at quoniam specimina his respondentia nondum vidi, haud sine hesitatione a sequente separavi.

10. P. *Lepidocarpon,* foliis lineari-lingulatis marginatis scabriusculis nitentibus ramisque glabris, involucri bracteis interioribus spathulatis dorso marginibusque nigro-barbatis, calycis aristis intùs pennatis, stylo pubescenti.

Scolymocephalus Africana, foliis longis glabris, cono variegato resinifero. *Herm. Cat. Mt.*

Scolymocephalus Africana, cono variegato resinifero. *Raj. Hist.* 3, *Dendr. p.* 9.

Lepidocarpodendron; foliis angustis, longioribus, salignis; calycis squamis elegantissimè ex flavo fusco albo nigro variegatis; florum plumulis atro-purpureis. *Boerh. Lugd. Bat.* 2, *p.* 188, *c. tab.*

Scolymocephalus Africana, foliis longis, cono variegato. *Weinm. Phyt.* 4, *p.* 289, *t.* 895.

81] Protea foliis lanceolatis integerrimis glabris calycinis supernè villosis. *Roy. Lugd. Bat.* 186.

Leucadendron Lepidocarpodendron. *α. Linn. Sp. Pl. ed.* i, *p.* 91, *ed.* ii, *p.* 134. *Berg. Act. Stockh.* 1766, *p.* 322.

Protea Lepidocarpodendron. *Linn. Mant.* 190,* desc. opt. nullo tamen specimine in Herb.

Protea Lepidocarpodendron *α. Linn. Syst. Veg.* xiii. *p.* 118.

Protea speciosa. *Thunb. Diss. n.* 53,* *Prod.* 27. *Willd. Sp. Pl.* 1, *p.* 531.

Protea cristata, *Lam. Illust. Gen.* 1, *p.* 235, *n.* 1226. *Poiret, Encyc. Botan.* 5, *p.* 644, exclus. syn. Roy. Linn. et Andr.

Protea grandiflora var. foliis undulatis. *And. Repos.* 301?

Hab. In Africæ Australis montibus, prope Prom. B. Spei. (v. v. in Monte Tabul.)

*11. P. *neriifolia*, foliis lineari-lingulatis lævibus opacis margine subsimplicibus basi extùs ramisque tomentosis, involucri bracteis interioribus apice parùm latioribus dorso argenteo-sericeo margine nigro-barbato, calycis aristis laminas superantibus intùs pennatis, stylo pubescenti.

Cardui generis elegantissimi cujusdam caput. *Clus. Exot.* 38.* *fig.* xv.

Hab. In Africâ Australi, ad radices montium prope Prom. B. Spei. (v. s. in Herb. Soc. Linn.)

Obs. I. Quam maximè affinis *P. Lepidocarpo*, at distincta videtur.

Obs. II. Synonymon Clusii huc retuli ob descriptionem optimè convenientem.

12. P. *pulchella*, foliis lineari-lingulatis marginatis niten-
82] tibus scabriusculis, ramis parùm tomentosis, involucri bracteis interioribus apice lanceolato-dilatato sericeo marginibus nigro-barbatis, calycis aristis vix longitudine laminarum, stylo pubescenti.

Protea pulchella. *And. Repos.* 270, bona quoad capitulum, sed folia opaca margine ciliata.

Protea speciosa, var. foliis glabris. *And. Repos.* 277, optima respectu capituli et foliorum nitore quæ autem margine concolori diversa.

Protea pulchella var. speciosa. *And. Repos.* 442, differt figura bractearum interiorum aristisque calycis laminâ longioribus.

Hab. In Africæ Australis montibus, prope Stellenbosch. *Gul. Roxburgh, M. D.* (v. s. in Herb. Banks. et Soc. Linn.)

13. P. *patens,* foliis angusto-oblongis subundulatis marginatis basi subattenuatis, ramisque villosis procumbentibus, involucro hemisphærico: bracteis sericeis; interiorum barba nigro-purpurea, stylo infrà pubescenti, calycis aristis longitudine laminarum.

Protea speciosa patens. *And. Repos.* 543.

Hab. In Africæ Australis montibus saxosis, prope Wilde River. *D. Niven.* (v. s. in Herb. Hibbert.)

Desc. *Frutex* procumbens. (*Niven.*) *Rami* tomentosi et villis patulis brevibus incani. *Folia* secunda, frequentia, obtusiuscula, venosa, 4—5 uncias longa, 7—9 lineas lata. *Involucrum* sessile, magnitudine pugni minoris: *Bracteis* obtusis, albo-sericeis, concaviusculis, interioribus nec dilatatis nec angustatis mediisque barbâ nigro-purpureâ instructis. *Calyx* sesquiuncialis albo-lanatus, aristis apice purpureis. *Stylus* basi compressâ tomentosâ suprà subulatus et infra [83 medium pube rarâ, suprà glaber, apice curvato. *Stigma* acutiusculum.

*14. P. *incompta,* foliis lingulato-oblongis: summis ramisque hirsutis, involucri bracteis interioribus apice orbiculato-dilatato margine barbato, calycis lanati aristis longitudine laminarum, stylo glabro apice simplici.

Protea foliis lanceolatis integerrimis glabris calycem succingentibus hirsutis. *Roy. Lugd. Bat.* 186? exclus. syn. Boerh. *t.* 189.

Hab. In Africâ Australi. *Oldenburgh:* prope Wynberg.

Gul. Roxburgh, M. D. (v. s. sub eodem nomine in Herb. Banks.)

DESC. *Frutex* erectus. *Rami* hirsutissimi villis longis patulis. *Folia* frequentia, modicè patentia, 4 uncias longa, 1 unciam lata, venosa, basi obtusa, marginibus simplicibus; callo apicis acuto, recurvo; inferiora glabra; summa angustiora, capitulum paulò superantia. *Involucrum* turbinatum, 4 uncias longum, bracteis tomentosis; exterioribus mediisque oblongis, imberbibus; interioribus barbâ marginali, albâ. *Calyx* lanâ albâ, implexâ.

15. P. *longifolia*, foliis elongato-linearibus basi attenuata, involucri turbinati bracteis glabris acutis imberbibus, calycis aristis laminâ longioribus, stylo pubescenti apice curvato.

Lepidocarpodendron; foliis angustis, longis, salignis nervo rubro; florum plumis violaceo-purpureis. *Boerh. Lugd. Bat.* 2, *p.* 186,* *c. tab.*

Protea longifolia nigra. *And. Repos.* 132.

Protea longifolia var. cono turbinato. *And. Repos.* 144.

Protea longifolia ferruginoso-purpurea. *And. Repos.* 133.

84] Protea Lepidocarpodendron. *Herb. Linn.*

HAB. In Africâ Australi, prope Prom. B. Spei. *Oldenburgh.* (v. s. in Herb. Banks.)

16. P. *mellifera*, foliis lanceolato-lingulatis basi attenuatis, involucro turbinato: bracteis glabriusculis imberbibus viscidis, aristis calycis albo-lanatis longitudine laminarum, stylo glabro: apice simplici.

Scolymocephalus Africana, foliis longis acutioribus hirsutis, cono mellifero. *Herm. Cat. Mt.*

Conifera Alypi folio seminibus pennatis, pluribus in medio coni conglomeratis, et non inter squamas aliorum conorum more nascentibus! *Sloane in Philos. Trans.* 17, *p.* 666,* *c. tab.*

Scolymocephalus Africana, foliis angustis villosis, cono mellifero. *Raj. Hist.* 3. *Dendr. p.* 9?[1]

Lepidocarpodendron; foliis angustis, brevioribus, salignis; calycis squamis elegantissimè ex roseo aureo albo atro-rubro variegatis; florum plumis albis. *Boerh. Lugd. Bat.* 2, *p.* 187, *c. tab.*

---

[1] The point of interrogation is added in M.S. by Mr. Brown in his own separate copy.—EDIT.

Scolymocephalus seu Lepidocarpodendron folio saligno. *Weinm. Phyt.* 4, *p.* 289, *t.* 896.

Protea caule multifloro calycibus oblongis foliis lanceolatis integerrimis. *Roy. Lugd. Bat.* 185.

Leucadendron repens *α*. *Linn. Sp. Pl. ed.* i, *p.* 91, *ed.* ii, *p.* 135.

Leucadendron repens. *Berg. Act. Stockh.* 1766, *p.* 322.

Protea repens. *Linn. Mant.* 189,* *Syst. Veg.* xiii, *p.* 118.

Protea mellifera. *Thunb. Diss. n.* 37.* *Prod.* 26. *Lam. Illust. Gen.* 1, *p.* 236, *n.* 1229. *Salisb. Prod.* 49. *Willd. Sp. Pl.* 1, *p.* 522. *Poiret, Encyc. Botan.* 5, *p.* 646. *Curt. Mag.* 346. *Wend. Hort. Herrenh.* 13.

Hab. In Africæ Australis collibus et campis, prope Prom. B. Spei, gregatim quandoque crescens. (v. v. prope [85 Constantiam.)

17. P. *grandiflora*, foliis oblongis sessilibus ramisque glabris, involucro hemisphærico imberbi nudiusculo, calyce tomentoso; unguibus dorso glabriusculis; aristis brevissimis, stylo glabro.

Scolymocephalus foliis oblongis glabris crassioribus latioribus. *Herm. Cat. Mt.*

Lepidocarpodendron; folio saligno lato; caule purpurascente. *Boerh. Lugd. Bat.* 2, *p.* 183,* *c. tab.*

Scolymocephalos foliis oblongis. *Weinm. Phyt.* 4, *p.* 28, *t.* 891.

Protea foliis lanceolatis integerrimis flore patente glabro stylis longissimis. *Roy. Lugd. Bat.* 186.

Protea cinaroides *β*. *Linn. Sp. Pl. ed.* i, *p.* 92, *ed.* ii, *p.* 136.

Protea grandiflora. *Thunb. Diss. n.* 51.* *Prod.* 27. *Willd. Sp. Pl.* 1, *p.* 530. *Lam. Illust. Gen.* 1, *p.* 234, *n.* 1210? *Poiret, Encyc. Botan.* 5, *p.* 640?

β. Protea marginata. *Lam. Illust. Gen.* 1, *p.* 235, *n.* 1225.

Hab. In Africæ Australis collibus et montibus, frequens. (v. v. in Monte Tabulari.)

Obs. Variat involucro penitùs glabro bracteisque exterioribus albo-tomentosis. *Folia* quandoque lineari-oblonga et tunc ab icone *P. abyssinicæ* haud distinguenda.

18. P. *Abyssinica*, foliis lanceolato-lingulatis obtusiusculis basi subangustatâ, involucro hemisphærico: bracteis obtusis imberbibus, calyce tomentoso; aristis brevissimis, receptaculo villoso? caule arborescenti.

Gaguedi. *Bruce. Abyss.* 5, *p.* 52, *c. tab. duab.*

86] Protea abyssinica. *Willd. Sp. Pl.* 1, *p.* 522.

Hab. In Abyssiniâ, Lamalmon. *Bruce l. c.*

19. P. *Scolymus*, foliis lineari-lanceolatis acutis submucronatis basi attenuatis, involucro hemisphærico; bracteis glabris obtusis, calycibus muticis, receptaculo villoso, caule ramoso multifloro.

Thymelæa capitata rapunculoides æthiopica saligneis foliis perianthio magno conformi squamoso. *Pluk. Mant.* 181, *t.* 440, *f.* 1, mala.

Scolymocephalus fruticis Æthiopici coniferi Breynii foliis; capite majore squamato. *Raj. Hist.* 3. *Dendr. p.* 10.

Lepidocarpodendron; acaulon; ramis numerosis e terrâ excrescens, calyce floris immaturo extùs ex rubro et flavo variegato intùs flavo. *Boerh. Lugd. Bat.* 2, *p.* 192, *c. tab.*

Scolymocephalus foliis angustis longis. *Weinm. Phyt.* 4. *p.* 288, *t.* 893, *f.* b.

Leucadendron Scolymocephalum. *Linn. Sp. Pl. ed.* i, *p.* 92, *ed.* ii, *p.* 135. *Berg. Act. Stockh.* 1766, *p.* 323.

Protea Scolymus. *Thunb. Diss. n.* 36.* *Prod.* 26. *Lam. Illust. Gen.* 1, *p.* 236, *n.* 1231. *Willd. Sp. Pl.* 1, *p.* 522. *Poiret, Encyc. Botan.* 5, *p.* 647. *And. Repos.* 409. *Wend. Sert. Hanov. t.* 20. *Sims, Bot. Mag.* 698.

Protea angustifolia. *Salis. Prod.* 49.

Hab. In Africæ Australis ericetis elevatioribus, prope Prom. B. Spei. (v. v. in Hort. Angl.)

20. P. *mucronifolia*, foliis lanceolato-linearibus mucronatis pungentibus basi obtusa, bracteis involucri lanceolatis mucronatis glabris, caule erecto multifloro.

Protea mucronifolia. *Salisb. Parad.* 24. *Sims, Bot.* [87 *Mag.* 933. *And. Repos.* 500.

Protea odoratissima. *Masson, in Herb. Ait.*

Hab. In Africâ Australi. *Masson.* In arenosis prope Berg River. *Niven.* (v. v. in Hort. Hibbert.)

21. P. *nana,* foliis subulatis mucronatis, involucris nutantibus hemisphæricis; bracteis glabris obtusis.

Thymelæa æthiopica abietiformis floribus phœniceis. *Pluk. Mant.* 180.

Leucadendron nanum. *Berg. Act. Stockh.* 1766, *p.* 325.* *Berg. Cap.* 22,* exclus. syn. Petiv. ad feminam Aulacis pinifoliæ jam citato.

Protea rosacea. *Linn. Mant. p.* 189,* *Syst. Veg.* xiii, *p.* 118.

Protea nana. *Thunb. Diss. n.* 29.* *Prod.* 26. *Hort. Kew.* 3, *p.* 484. *Willd. Sp. Pl.* 1, *p.* 519.

Protea rosacea. *Lam. Illust. Gen.* 1, *p.* 238, *n.* 1251. *Poiret, Encyc. Botan.* 5, *p.* 653. *Smith, Exot. Bot.* 1, *p.* 85, *t.* 44.

Protea acuifolia. *Salisb. Parad.* 2.

Hab. In Africæ Australis montosis; prope Roode Zànt Cascade. (v. s. in Herb. Linn. a Bergio.)

Obs. Nomen Cel. Bergii utpotè primum, nec ineptum et a Thunbergio, Dryandro et Willdenovio receptum, prætuli.

*22. P. *pendula,* foliis lineari-lanceolatis mucronulatis: terminalibus ramorum floriferorum recurvorum reclinatis, bracteis involucri obtusis demùm glabriusculis.

Hab. In Africâ Australi. *Masson.* (v. s. in Herb. Banks.)

Desc. *Frutex* erectus. *Rami* teretes, glabri; ultimi tenuissimè tomentosi: floriferi supra medium recurvi. *Folia* sparsa, passim subopposita, frequentia, modicè [88 patentia; extra medium parùm latiora, obtusa, mucronulo patenti, marginibus subrecurvis, glauca, compacta, adulta glaberrima, sesquiunciam longa. *Involucra* pendula, solitaria, hemisphærica, magnitudine pruni: *Bracteis* arctè imbricatis, imberbibus, exutâ pube tenuissimâ sericeâ demùm glabriusculis; interioribus sensim longioribus. *Calyces* inclusi, submutici, laminis barbatis. *Stylus* glaber, vix uncialis, apice simplici.

23. P. *tenax*, foliis lineari-lanceolatis planis: basi attenuatis; margine scabriusculis, ramis decumbentibus, involucro hemisphærico sericeo obtuso, calycis (uncialis) unguibus glabriusculis: aristis lanatis laminâ dimidio-brevioribus.

Erodendrum tenax. *Salisb. Parad.* 70.

Hab. In Africæ Australis depressis, Lange Kloof. *D. Niven.* (v. s. in Herb. Soc. Linn.)

Desc. *Frutex* diffusus. *Rami* glabri v. hirsuti. *Folia* 4—6 uncias longa, 4—6 lineas lata, acuta, uninervia, venis obsoletis, minutè punctulata, scabriuscula; ramorum subsecunda. *Involucrum* bracteis concavis, tenuissimè ciliatis, exterioribus ovatis; interioribus oblongis. *Calyx* unguibus suprà pilosiusculis; laminis dorso nudiusculis. *Stylus* glaber, apice simplici.

24. P. *canaliculata*, foliis linearibus aveniis lævibus: suprà concaviusculis; ramisque glabris decumbentibus, involucro obtuso: bracteis interioribus subsericeis, calycis unguibus glabris: aristis penicillatis laminæ dimidio brevioribus.

Protea canaliculata. *And. Repos.* 437.

Hab. In Africæ Australis depressis arenosis, Lange Kloof. *D. Niven.* (v. s. in Herb. Lambert.)

89] Desc. *Frutex* subdecumbens. (*Niven.*) *Folia* frequentia, 4—6 uncias longa, vix duas lineas lata, acuta. *Involucrum* magnitudine pruni, *Bracteis* concavis; exterioribus glabratis; interioribus brevissimè ciliatis. *Calyx* uncialis, unguibus laminisque glabris: Aristis albo-barbatis. *Stylus* glaber apice simplici.

25. P. *acaulis*, caulibus abbreviatis, ramis depressis, foliis obovato-oblongis marginatis venosis basi attenuatis, involucris hemisphæricis inclinatis; bracteis obtusis glabris, calycibus muticis.

Scolymocephalus Africana foliis oblongis glabris humilis et procumbens. *Herm. Cat.* 19.

Scolymocephalus Africanus Lauri folio humilis et procumbens. *Raj. Hist.* 3. *Dendr. p.* 9.

Lepidocarpodendron; acaulon; foliis paucis, latis, nervo et marginibus rubris ornatis; fructu parvo. *Boerh. Lugd. Bat.* 2, *p.* 191,* *c. tab.*

Scolymocephalus s. Lepidocarpodendron acaulon. *Weinm. Phyt.* 4. *p.* 291, *t.* 898, b. bona.

Protea caule unifloro foliis lanceolatis. *Roy. Lugd. Bat.* 186.

Leucadendron acaulon. *Wachend. Ultraj.* 204. *Linn. Sp. Pl. ed.* i, *p.* 92, *ed.* ii, *p.* 135.* *Syst. Nat.* xii, *t.* 1, *p.* 110, omissa in Mant. et Syst. Veg. xiii.

Protea acaulis. *Thunb. Diss. n.* 49.* *Prod.* 27. *Willd. Sp. Pl.* 1, *p.* 529.

Protea nana. *Lam. Illust. Gen.* 1, *p.* 233, *n.* 1208. *Poiret, Encyc. Botan.* 5, *p.* 639.

Protea glaucophylla. *Salisb. Parad.* 11.

HAB. In Africæ Australis collibus, prope Promont. B. Spei. (v. v. juxta Simons Bay.)

*26. P. *elongata,* caulibus nanis, foliis elongato-lanceolatis (pedalibus) planis marginatis venosis lævibus; basi valdè attenuata lineari, involucro hemisphærico inclinato; bracteis glabris obtusis, calycibus brevissimè aristatis. [90

HAB. In Africæ Australis humidis elevatioribus. Roode Zant Cascade. *D. Niven.* (v. s. in Herb. Hibbert.)

OBS. Nimis affinis P. acauli.

*27. P. *angustata,* caulibus nanis, foliis lanceolato-linearibus planis marginatis venosis lævibus, involucro hemisphærico inclinato: bracteis glabris obtusis, calycibus muticis: unguibus extùs glabris margine lanatis.

HAB. In Africæ Australis montosis solo fertiliori; Hout Hoek. *D. Niven.* (v. s. in Herb. Hibbert.)

OBS. An species distincta a *P. acaule ?*

*28. P. *revoluta,* caulibus nanis, foliis canaliculato-semiteretibus lævibus, involucro hemisphærico inclinato: bracteis glabris obtusis, calycibus muticis: unguibus extùs glabris margine lanatis.

HAB. In Africæ Australis montibus aridis. *D. Niven.* (v. s. in Herb. Hibbert.)

DESC. *Frutex* humilis, basi divisus. *Rami* adscendentes, glabri, vix longitudine foliorum. *Folia* 6—9 uncias longa, acuta, impunctata, marginibus recurvis, simplicibus, canaliculata, infra medium teretiuscula parùmque attenuata. *Involucrum* brevissimè pedunculatum magnitudine pruni minoris. *Calycis* laminæ sericeæ. *Stylus* glaber, apice simplici.

*29. P. *tenuifolia,* caulibus nanis, foliis canaliculato-
91] semiteretibus scabris, involucro hemisphærico: bracteis tomentosis, calycis unguibus laminisque hirsutis: aristis brevissimis.

HAB. In Africæ Australis montibus sterilibus. *D. Niven.* (v. s. in Herb. Hibbert.)

DESC. *Folia* numerosa, punctis elevatis utrinque scabra, marginibus revolutis canaliculata, basi planiuscula, spithamea v. dodrantalia. *Involucrum* erectum, sessile, magnitudine pomi minoris, tomento ferrugineo tardiùs deciduo. *Calyx* sesquiuncialis laminarum villis brevioribus, aristis (mucronibus potiùs) duabus lamina quadruplo brevioribus. *Stylus* glaber, apice simplici.

*30. P. *lævis,* caulibus nanis decumbentibus, foliis elongato-linearibus lævibus aveniis marginibus recurvis, involucro hemisphærico: bracteis obtusis subsericeis, calycibus subuncialibus muticis.

HAB. In Africâ Australi. *D. Masson.* (v. s. in Herb. Banks.)

DESC. *Caulis* brevissimus, decumbens (*Masson.*) glaber. *Folia* secunda, glauca, spithamea, acuta, marginibus lævibus non incrassatis, basi attenuata plana. *Involucrum* sessile, erectum, magnitudine pomi minoris; *Bracteis* primùm subsericeis, demùm glabriusculis, marginibus brevissimè ciliatis. *Calyx unguibus* extùs glabriusculis, margine lanatis; *Laminis* villosis.

*31. P. *scabra,* caulibus nanis, foliis elongato-linearibus scabris obsoletè venosis margine subrecurvis, involucro turbinato-hemisphærico: bracteis obtusis tomentosis, unguibus calycis hirsutis: aristis laminâ dimidio brevioribus.

HAB. In Africâ Australi, prope Promont. B. Spei. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

DESC. *Caulis* semisepultus, divisus, ramis adscendenti- [92 bus, folio brevioribus. *Folia* conferta, erecta, spithamea, vix pedalia, 3—4 lineas lata, apice acuto sphacelato, uninervia, obsoletè venosa, utrinque tuberculis pustuliformibus scabra, aliisque minutissimis conspersa, basi attenuatâ petioliformi lævi. *Involucrum* sessile, erectum, magnitudine pomi minoris; *Bracteis* tomento ferrugineo demùm subdeciduo. *Calyx* vix semuncialis; laminis hirsutis; aristis villis flexuosis cinereis ferrugineisve.

OBS. In Herbario D. Hibbert plantam vidi Foliis planis elongato-lanceolatis; Involucris turbinatis; Calycibus albo-lanatis aristarum lana longiore magisque implexa; Stylo biunciali, vix arcuato: an distincta species?

32. P. *repens*, caulibus nanis, foliis elongato-linearibus scabriusculis margine revolutis, involucro turbinato: bracteis obtusis tomentosis: interioribus margine lanatis, calycibus biuncialibus; unguibus hirsutis; aristis laminâ brevioribus, stylo apice simplici.

Lepidocarpodendron; foliis longissimis, angustissimis, fructum elegantissimè ex rubro flavo et albo variegatum instar coronæ succingentibus; radice repente. *Boerh. Lugd. Bat.* 2, *p.* 190,* *c. tab.*

Scolymocephalus s. Lepidocarpodendron foliis longissimis. *Weinm. Phyt.* 4, *p.* 290, *t.* 897, a.

Protea caule unifloro calyce oblongo foliis linearibus longissimis. *Roy. Lugd. Bat.* 185.

Leucadendron, foliis longissimis obtusè trigonis longitudine florem superantibus. *Wachend. Ultraj.* 204.

Leucadendron repens β. *Linn. Sp. Pl. ed.* i, *p.* 92, *ed.* ii, *p.* 135.

Protea repens. *Thunb. Diss. n.* 38.* *Prod.* 26. *Lam.* [93 *Illust.* 1, *p.* 236, *n.* 1230. *Willd. Sp. Pl.* 1, *p.* 523. *Poiret, Encyc. Botan.* 5, *p.* 646.

Hab. In Africæ Australis campis arenosis prope Prom. B. Spei. (v. s. in Herb. Banks.)

Obs. Varietas? foliis vix punctatis, sesquipedalibus.

*33. P. *lorea*, caulibus nanis, foliis teretibus elongatis lævibus, involucro turbinato sub-pedunculato: bracteis acutiusculis sericeis, calycis unguibus extùs glabris: aristis laminâ brevioribus, stylo apice curvato.

Hab. In Africâ Australi, prope Promont. B. Spei. *D. Masson.* (v. s. in Herb. Banks.)

Desc. Caulis brevissimus, semisepultus. *Folia* numerosa, pedalia, crassitie fili ligaterii. *Involucrum* pedunculo brevi squamis arctè imbricatis tecto: *Bracteis* exterioribus ovatis acutiusculis, interioribus oblongo-linearibus. *Calyx* Unguibus Laminisque extùs *Aristis* undique lana brevi densa alba crispata. *Stylus* glaber.

34. P. *turbiniflora*, caulibus nanis, foliis elongato-lanceolatis marginatis subundulatis lævibus, involucro subturbinato: bracteis tomentosis obtusis, calycis aristis longitudine laminarum: lana apicis longiore crispa.

Erodendrum turbiniflorum. *Salisb. Parad.* 108.

Protea cæspitosa. *And. Repos.* 526.

Hab. In Africæ Australis montibus; in humidis solo fertiliori. *D. Niven.* (v. s. in Herb. Hibbert.)

Desc. *Caules* cæspitosi, abbreviati, divisi, erecti. *Folia* uninervia, venosa, juniora villosa, adulta glabra, nitida, minutissimè punctata, acutissima, basi valdè attenuatâ 94] petioliformi, spithamea, vix pedalia, unciam circiter lata; extima ramorum nana, biuncialia, basi vix attenuata membranacea, subscariosa. *Involucrum* sessile, vix biunciale: *Bracteis* subincanis, ciliatis, interioribus apice lanatis. *Calyx* unguibus laminisque lanatis: *Aristis* curvatis, albolanatis, lanâ terminali fulvâ. *Stylus* glaber, apice levissimè curvato.

*35. P. *Scolopendrium*, caulibus nanis, foliis elongato-lanceolatis marginatis lævibus, involucro turbinato: bracteis lanceolatis acuminatis apice tomentosis, aristis calycis lamina dimidio brevioribus.

HAB. In Africâ Australi, Wintershoek. *D. Joh. Roxburgh.* (v. s. in Herb. Lambert.)

DESC. *Caulis* foliis aliquoties brevior. *Folia* pedalia, sesquiunciam vix duas uncias lata, costâ subtùs eminente, venis ramosis minutissimè punctata, basi valdè attenuata. *Involucra* subsessillia, solitaria v. bina, quandoque tres uncias longa: *Bracteis* interioribus apice tomento persistente cinereis. *Calyx* lanatus. *Stylus* glaber, infra medium dilatatus. *Ovarii* barba alba.

†† *Flores laterales.*

36. P. *cordata,* floribus lateralibus, foliis cordatis subrotundis nervosis, bracteis involucri glabris.

Protea cordata. *Thunb. Diss. n.* 60,* *tab.* 5, bona. *Prod.* 28. *Lam. Illust. Gen.* 1, *p.* 233, *n.* 1207. *Willd. Sp. Pl.* 1, *p.* 534. *Poiret, Encyc. Botan.* 5, *p.* 639. *And. Repos.* 289.

Protea cordifolia. *Sims, Bot. Mag.* 649.

HAB. In Africæ Australis montibus, Hottentots Holland et prope Fluvium Zonder End. *Thunb.* l. c. (v. s. in Herb. Banks.)

37. P. *amplexicaulis,* floribus lateralibus, foliis cordatis [95 ovatis amplexicaulibus divaricatis apice recurvis, bracteis involucri pubescentibus.

Erodendrum amplexicaule. *Salisb. Parad.* 67.

Protea repens. *And. Repos.* 453.

HAB. In Africâ Australi. *D. Masson.* (v. s. in Herb. Banks.)

38. P. *humilis,* floribus lateralibus, foliis linearibus acutis, (biuncialibus,) receptaculo conico: paleis acutis.

Protea humiflora. *And. Repos.* 532.

HAB. In Africâ Australi. *D. Masson.* (v. s. in Herb. Banks.)

DESC. *Caulis* nanus. *Rami* glabri. *Folia* plana, fere

3 uncias longa. *Involucra* hemisphærica, bracteis obtusis, interioribus apice pube adpressâ ferrugineâ.

*39. P. *acerosa,* floribus lateralibus, foliis subulatis, receptaculo convexiusculo: paleis obtusis.

HAB. In Africâ Australi. *D. Masson.* (v. s. in Herb. Banks.)

DESC. *Caulis* brevis. *Rami* erecti, glabri. *Folia* lævia. *Involucra* ramea, subaggregata, breviter pedunculata; *Bracteis* obtusis, interioribus pube diutiùs persistenti subsericeis. *Calyx* muticus, apice barbato. *Receptaculi* paleæ connatæ. *Squamulæ hypogynæ* subulatæ.

OBS. Varietas? Foliis longioribus (sesquiuncialibus) semiteretibus in Herbario et Hort. D. Hibbert vidi, quæ secundum *D. Niven* 3—4 pedes alta in montosis solo fertiliori prope Zonder End lecta. Hæc Protea virgata. *And. Repos.* 577.

6. LEUCOSPERMUM.

LEUCADENDRUM. *Salisb. Parad.* Proteæ sect. 3. *Linn. Mant.* CONOCARPODENDRA (spuria 196 et 198). *Boerh. Lugd.*

96] CHAR. GEN. *Calyx* irregularis, labiatus, unguibus tribus (raró omnibus) cohærentibus, laminis staminiferis distinctis. *Stylus* filiformis, deciduus. *Stigma* incrassatum, glabrum (nunc inæquilaterale). *Nux* ventricosa, sessilis, lævis. *Capitulum* indefinitè multiflorum: *Involucro* polyphyllo imbricato.

HABITUS. Frutices *sæpe humiles, quandoque arborescentes, plerique tomentosi v. hirsuti.* Folia *integra v. apice calloso-dentata.* Capitula *terminalia; Floribus flavis, modò imbricatis bracteis distinguentibus persistentibus induratis; modò fastigiatis receptaculo planiusculo, paleis angustis, non mutatis, subdeciduis.*

† *Capitulum amentaceum; Bracteis propriis persistentibus subinduratis.*

1. L. *lineare*, stylo calycem hirsutum superante, stigmate hinc gibboso, involucro tomentoso, foliis linearibus integris; callo apicis subbarbato, ramis glabris.

Protea linearis. *Thunb. Diss. n.* 35,* *tab.* 4, pedunculo insolitè elongato stylisque apice nimis arcuatis. *Thunb. Prod.* 26. *Lam. Illust. Gen.* 1, *p.* 237, *n.* 1241. *Willd. Sp. Pl.* 1, *p.* 521. *Poiret, Encyc. Botan.* 5, *p.* 650.

HAB. In Africæ Australis arenosis, Paarl, Drakenstein, Stellenbosch. (v. s. in Herb. Banks. Lambert. Soc. Linn.)

OBS. Folia sæpiùs canaliculata marginibus inflexis, nunquam reflexis, callo apicis villis albis diu tecto; dum plana obsoletè striata marginibus scabriusculis; rarissimè 2—3-dentata.

*2. L. *attenuatum* stylo calycem hirsutum superante, stigmate subæquilaterali, foliis cuneato-linearibus tridentatis aveniis basi attenuata, involucris ramisque tomentosis.

HAB. In Africæ Australis arenosis elevatioribus inter saxa; Zwellendam. *D. Niven.* (v. s. in Herb. Banks. [97 Lambert. Hibbert.)

DESC. *Frutex* erectus, tripedalis. *Rami* stricti, crassitie pennæ anserinæ, incani. *Folia* glaberrima, lævia, basi uninervi vix tortâ, crassa, raró 5-dentata, sesquiuncialia, biuncialia. *Capitula* solitaria v. gemina, breviter pedunculata, obovata, magnitudine pruni majoris. *Bracteæ involucri* ovatæ, acuminatæ, arctè imbricatæ; *pedunculi* patulæ. *Stylus* calyce unam quartam longior. *Stigma* conico-ovatum.

OBS. Hujus Varietas? insignis. Foliis latioribus, apice profundè tridentatis, dentibus lateralibus sæpissimè bi- intermedio tri-dentatis. Ramulis præter tomentum incanum villis patulis brevibus. (v. s. in Herb. Hibbert.)

3. L. *Tottum*, stylo calycem hirsutum $\frac{1}{4}$ superante, stigmate hinc gibboso, foliis lineari-oblongis sub-integris venosis basi obtusâ, bracteis involucri glabris ciliatis.

Protea Totta. *Linn. Mant.* 191,* fide spec. in illius Herb.

Thunb. Diss. n. 54.* *Prod.* 27. *Lam. Illlust. Gen.* 1, *p.* 235, *n.* 1224. *Willd. Sp. Pl.* 1, *p.* 532. *Poiret, Encyc. Botan.* 5, *p.* 644.

Hab. In Africæ Australis montosis; Roode Zant Cascade. (v. s. in Herb. Linn. Banks., &c.)

Obs. *Frutex* subdecumbens (secund. *D. Niven*). *Rami* sæpiùs hirsuti, quandoque glabri. *Folia* interdum 2—3-dentata, venis obsoletis. *Calyces* bracteis triplo longiores. *Stigma* indivisum.

*4. L. *medium*, stylo calycem hirsutum ferè bis superante, stigmate hinc gibboso, foliis lineari-oblongis integris passimque 2—3-dentatis: callis acutis; basi obtusâ, bracteis involucri tenuissimè pubescentibus ciliatis, capitulis cernuis.

98] Protea formosa. *And. Repos.* 17? quæ differt tamen, Foliis longioribus, Calycibus unilabiatis unguibus omnibus longitudinaliter cohærentibus, Bracteis involucri sphacelatis, Stigmate ovato-oblongo vix gibboso.

Hab. In Africæ Australis montibus. (v. s. in Herb. Soc. Linn.)

Obs. Species inter *L. Tottum* et *ellipticum* media, illo foliis, hoc floribus ferè exactè conveniens.

5. L. *ellipticum*, stylo calycem hirsutum ferè bis superante, stigmate conico-ovato hinc gibboso, foliis oblongis 3—4-dentatis; basi obtusis; biuncialibus: bracteis involucri tenuissimè pubescentibus ciliatis, capitulis erectis.

Protea elliptica. *Thunb. Diss. n.* 15.* *Prod.* 26. *Willd. Sp. Pl.* 1, *p.* 512.

Protea vestita. *Lam. Illust. Gen.* 1, *p.* 239, *n.* 1259?

Protea conocarpa A. *Poiret, Encyc. Botan.* 5, *p.* 657?

Hab. In Africæ Australis montibus. (v. s.)

Obs. Calli apicis foliorum obtusiusculi.

*6. L. *nutans*, stylo calycem supra sericeum bis superante, stigmate obliquo turbinato! involucri bracteis tomentosis incanis, capitulis nutantibus, foliis ovatis oblongisve 3—5-dentatis; basi obtusis.

a. Foliis subovatis cordatis vix sesquiuncialibus.

β. Foliis lineari-oblongis basi simplicibus, 2—3 uncias longis.

Hab. In Africæ Australis montibus. *Masson.* (v. s. *α.* in Herb. Banks., β. in Herb. Lambert.)

Obs. Distincta stigmate obliquo, apice depresso, axi longitudinali elevata.

Variat ramis tomentosis et hirsutis.

7. L. *Conocarpum*, stylo calycem villosissimum super- [99 ante, stigmate subæquilaterali oblongo-conico, foliis ovalibus 3—9-dentatis, ramis bracteisque hirsutissimis.

Scolymocephalus africanus latifolius lanuginosus foliis in summitate crenatis. *Herm. Cat.* 20.

Leucadendro similis Africana arbor argentea folio summo crenaturis florida. *Plukn. Phyt. t.* 200, *f.* 2, folium, sed nux vix hujus generis.

Leucadendron, africana arbor argentea summo folio crenato. *Plukn. Alm.* 212.

Conophoros capitis Bonæ Spei, folio in summo dentato. *Raj. Hist.* 3. *App.* 240. *Petiv. Mus.* 172, fide spec. in Herb. Petiv.

Conocarpodendron; folio crasso, nervoso, lanuginoso, suprà crenato, ibique limbo rubro; flore aureo; cono facilè deciduo. *Boerh. Lugd. Bat.* 2, *p.* 196, *c. tab.* bona.

Scolymocephalus africanus folio crasso nervoso. *Weinm. Phyt.* 4, *p.* 292, *t.* 899, *f. b.*

Protea foliis oblongo-ovatis apice quinquedentato-callosis. *Roy. Lugd. Bat.* 184.

Leucadendron foliis ovatis obversis oblongis, margine calloso fimbriatis ad apicem crenatis. *Wachend. Ultraj.* 203.

Leucadendron Conocarpodendron. *Linn. Sp. Pl. ed.* i, *p.* 93; *ed.* ii, *p.* 136. *Syst. Nat.* xii, *t.* 2, *p.* 110. *Berg. Act. Stockh.* 1766, *p.* 321. Omiss. in Linn. Mant. et Syst. Veg. xiii.

Protea conocarpa. *Thunb. Diss. n.* 14,* desc. partim a L. grandifloro desumptâ. *Thunb. Prod.* 25. *Willd. Sp. Pl.* 1, *p.* 512. *Lam. Illust. Gen.* 1, *p.* 239, *n.* 1260, *tab.* 53, *f.* 3, mala, præcipuè floribus separatis. *Poiret, Encyc. Botan.* 5, *p.* 656.

Hab. In Africæ Australis campis et collibus sterilibus, prope Promont. B. Spei. (v. v. ad littora Simon's Bay.)

100] 8. L. *grandiflorum*, stylo calycem villosissimum superante, stigmate æquilaterali oblongo-cylindraceo, foliis oblongo-lanceolatis tridentatis integrisque, ramis hirsutissimis, bracteis involucri glabris ciliatis.

Leucadendron grandiflorum. *Salisb. Parad.* 116.

Hab. In Africæ Australis montosis. (v. s. in Herb. Banks. sub nomine Proteæ villosiusculæ.)

9. L. *puberum*, stylo calycem hirsutum superante, stigmate æquilaterali ovato, foliis lanceolatis ellipticisve integris uncia brevioribus pubescentibus, ramis hirsutis, bracteis involucri incano-villosis ellipticis longè acuminatis.

Protea pubera. *Linn. Mant.* 192,* fide spec. in illius Herb., exclusis synonymis. *Thunb. Diss. n.* 56. *Prod.* 27. *Lam. Illust. Gen.* 1, *p.* 234, *n.* 1216. *Willd. Sp. Pl.* 1, *p.* 533, excl. syn. Bergii. *Poiret, Encyc. Botan.* 5, *p.* 642.

Hab. In Africæ Australis summis montibus; Hottentot's Holland. (v. s. in Herb. Banks., Lambert.)

Obs. Variat foliis angusto-lanceolatis.

*10. L. *buxifolium*, stylo calycem hirsutum superante, stigmate æquilaterali ovato, foliis ovalibus obtusis integris unguicularibus pubescentibus, ramis hirsutis, bracteis involucri orbiculato-ovatis breviter acuminatis glabriusculis ciliatis.

Hab. In Africæ Australis montibus. *Masson.* (v. s. in Herb. Banks.)

Obs. Proximum priori et fortè cum eo a Thunbergio confusum.

*11. L. *patulum*, stylo calycem tomentoso-villosum super-101] ante, stigmate æquilaterali ovato, foliis spathulato-linearibus integris: adultis glabris, ramis divaricatis tomentosis, capitulis pedunculatis.

Hab. In Africâ Australi. *Masson.* (v. s. in Herb. Banks.)

Desc. *Frutex* humilis, ramosissimus. *Folia* conferta, uncia breviora, basi angustata, callo apicis acutiusculo, summa tomentosa. *Capitula* magnitudine avellanæ; pedunculo tomentoso, bracteis lanceolatis; *Bracteæ* involucrantes ovatæ, acuminatæ, tomentosæ, incanæ. *Calyx* tubulosus, bilabiatus, tomentosus, villisque brevibus patulis suprà frequentioribus. *Stylus* 9 lineas longus. *Stigma* breve.

Obs. Valdè affinis *L. pubero*.

*12. L. *spathulatum*, stylo calycem villoso-tomentosum superante, stigmate æquilaterali, foliis spathulatis basi lineari: adultis glabris uncialibus, ramis hirsutis patulis, capitulis pedunculatis, bracteis tomentosis acuminatis.

Hab. In Africâ Australi. *D. Niven.* (v. s. in Herb. Hibbert.)

Desc. *Frutex* humilis, ramosissimus. *Rami* villis brevibus patulis tomentoque cinereo instructi. *Folia* elliptico-spathulata, basi attenuata, lineari, tortâ: callo apicis obtuso; obsoletè venosa. *Capitulum* magnitudine juglandis minoris; *Bracteis* involucrantibus ovatis, acuminatis. *Calyces* villis brevibus patulis densè tecti, laminarum decumbentibus, brevissimis. *Stylus* uncialis.

13. L. *tomentosum*, stylo sublongitudine calycis, caule erecto, foliis linearibus cuneatisve tridentatis tomentosis, bracteis lanceolatis tubum calycis subæquantibus.

Protea tomentosa. *Thunb. Diss. n.* 18.* *Prod.* 26. *Linn. Suppl.* 118. *Lam. Illust. Gen.* 1, *p.* 239, *n.* 1257. [102
Willd. Sp. Pl. 1, *p.* 514. *Poiret, Encyc. Botan.* 5, *p.* 656.

α. foliis linearibus canaliculatis aveniis, ramis bracteisque tomentosis, calycis laminis barbatis.

β. foliis lineari-cuneatis planis subvenosis 3—5-dentatis, ramis hirsutis, bracteis calycisque laminis tomentosis.

Protea candicans. *And. Repos.* 294.

γ. foliis linearibus planis, ramis hirsutis, bracteis glabriusculis ciliatis.

Hab. In Africæ Australis montibus, prope Promont.

B. Spei. (v. s. in Herb. Banks., Lambert., et Soc. Linn.)

Obs. Plantæ pro varietatibus suprà habitæ fortè species distinctæ.

14. L. *Hypophyllum*, stylo longitudine calycis, caule procumbente, foliis linearibus tridentatis, bracteis orbiculato-ovatis tomentosis tubo calycis dimidio brevioribus.

Thymelæa capitata Rapunculoides Nerii crassioribus foliis summo apice tridentatis æthiopica coniformi calyce squamato. *Plukn. Mant.* 181, *t.* 440, *f.* 3.

Conophoros capensis folio angusto summo dentato *Petiv. Mus.* 900, fide spec. in illius Herbar.

Scolymocephalos foliis angustis in summitate tridentatis. *Raj. Hist.* 3, *Dendr. p.* 9.

Conocarpodendron; folio rigido, angusto, apice tridentato rubro; flore aureo. *Boerh. Lugd. Bat.* 2, *p.* 198.* *c. tab.*

Scolymocephalus seu Conocarpodendron folio angusto. *Weinm. Phyt.* 4, *p.* 294, *t.* 902, *f. a.*

Protea foliis lanceolato-linearibus apice tridentato-callosis. *Linn. Hort. Cliff.* 29. Herb. Cliff. absque fructificatione.

103] Protea foliis lanceolatis linearibus apice tridentato callosis capitulis aphyllis. *Roy. Lugd. Bat.* 184. *Wachend. Ultraj.* 202.

Leucadendron Hypophyllocarpodendron. *Linn. Sp. Pl. ed.* i, *p.* 93; *ed,* ii, *p.* 136. *Berg. Act. Stockh.* 1766, *p.* 321.* *Berg. Cap.* 16.*

Protea Hypophyllocarpodendron. *Linn. Mant.* 191.* desc. opt.

Protea Hypophylla. *Thunb. Diss. n.* 16.* *Prod,* 26. *Lam. Illust. Gen.* 1, *p.* 239, *n.* 1256. *Willd. Sp. Pl.* 1, *p.* 513. *Poiret, Encyc. Botan.* 5, *p.* 655.

Hab. In Africæ Australis sabulosis depressis prope Prom. B. Spei. (v. v. in collibus juxta Simon's Bay.)

Obs. Variat foliis glabris, pubescentibus et incano-tomentosis, 3 — 5-dentatis passimque integris, planis canaliculatisve, ramis nudiusculis, villosis v. tomentosis;

Capitulis subsessilibus pedunculatisque; Bracteis latè ovatis, acutis orbiculatisve.

†† *Receptaculum planiusculum; Bracteis propriis angustis deciduis.*

*15. L. *molle*, foliis ellipticis acutis 2—3-dentatis integrisve subsericeo-pubescentibus mollibus, bracteis exterioribus glabriusculis, stigmate ovato.

Hab. In Africæ Australis montibus. (v. s.)

Obs. Proximum *L. crinito*, diversum figura foliorum et fortè caule procumbenti.

16. L. *crinitum*, foliis obovato-oblongis obtusis 3—5-dentatis integrisve; basi angustatis; pubescentibus demum glabris scabriusculis, bracteis omnibus villosis.

Protea crinita. *Thunb. Diss. n.* 13?* *Prod.* 25. *Willd. Sp. Pl.* 1, *p.* 511? *Poiret, Encyc. Botan.* 5, *p.* 657.

Hab. In Africâ Australi. (v. s. in Herb. Soc. Linn.)

17. L. *oleæfolium*, foliis ovali-oblongis sublanceolatisve tridentatis et integris: adultis glabris, bracteis omnibus villosis, stigmate oblongo. [104

Leucadendron oleæfolium. *Berg. Act. Stockh.* 1766, *p.* 320.* *Berg. Cap.* 15.*

Protea criniflora. *Linn. Suppl.* 117.*

Hab. In Africâ Australi. (v. s. in Herb. Banks.)

Obs. Duplex varietas, altera foliis ovali-oblongis obtusis; bracteis exterioribus glabriusculis apice barbatis: altera foliis lineari-oblongis acutiusculis bracteis omnibus villosis. Ambæ à *L. crinito* diversæ foliis basi haud angustatâ.

18. L. *diffusum*, foliis cuneato-linearibus integris 2—3-dentatisve basi angustatis: adultis glabris, ramis procumbentibus, bracteis tomentosis lanceolatis acuminatis calyce dimidio brevioribus.

Protea heterophylla. *Thunb. Diss. n.* 19*? *Prod.* 26? *Willd. Sp. Pl.* 1, *p.* 515.

Hab. In Africâ Australi. *Gul. Roxburgh, M.D.* (v. s. in Herb. Banks. et Soc. Linn.)

Desc. *Frutex* prostratus? *Rami* longi, glabri v. hirsuti, quandoque adscendentes. *Folia* uncialia, plana v. marginibus leviter inflexis concaviuscula, obsoletè venosa, in ramis prostratis secunda. *Capitula* solitaria, breviter pedunculata, turbinata, magnitudine avellanæ; *Bracteæ* involucri incanæ, calyce hirsuto dimidio breviores. *Pistillum* calyce sesquilongius. *Stigma* clavatum *stylo* capillari parùm crassius.

Obs. Species affinis *L. patulo.*

105] 7. MIMETES.

Salisb. Parad. Hypophyllocarpodendron. *Boerh. Lugd.* Proteæ Sp. 9—10. *Linn. Mant.*

Char. Gen. *Calyx* quadripartitus, æqualis, laciniis distinctis. *Stylus* filiformis, deciduus. *Stigma* cylindraceum, gracile. *Nux* ventricosa, sessilis, lævis. *Receptaculum* commune planum, paleis angustis, deciduis. *Involucrum* indefinitè polyphyllum, imbricatum.

Habitus. Frutices. Folia *integra v. calloso-dentata.* Capitula *axillaria, in quibusdam folio superiori cucullato amplexa! quandoque terminalia.* Involucra *membranacea, raro coriacea, nunc dimidiata!* Pistilla *calyce post expansionem flaccido longiora.* Stigma *sæpissimè acutum.*

† *Capitula axillaria.*

1. M. *hirta,* involucris æquilateralibus coloratis acuminatis semi-exsertis 8—10-floris, stigmate subulato, laminis calycis plumosis, foliis acutis integerrimis.

Scolymocephalus Africanus argenteus foliis Dorycnii Plateau. *Herman. Cat. Mt.*

Conophoros capensis foliis pilosis apice nigricante. *Petiv. Mus.* 62, fid. spec. in illius Herb.

Lepidocarpodendron; foliis sericeis, brevibus, confertissimè natis; fructu gracili, longo. *Boerh. Lugd. Bat.* 2, *p.* 194, *c. tab.*

Scolymocephalus africanus argenteus foliis Dorycnii. *Weinm. Phyt.* 4, *p.* 292, *t.* 899, bona.

Leucadendron hirtum. *Amœn. Acad.* 6, *p.* 83.* *Sp. Pl. ed.* ii, *p.* 136.

Protea hirta. *Linn. Mant. p.* 188.* (Herb. Linn.) [106 *Thunb. Diss. n.* 55,* exclus. syn. Boerh. Lugd. 2, p. 205. *Thunb. Prod.* 27. *Lam. Illust. Gen.* 1, *p.* 234, *n.* 1213. *Willd. Sp. Pl.* 1, *p.* 532. *Poiret, Encyc. Botan.* 5, *p.* 641.

Hab. In Africæ Australis campis collibusque, in locis humidis. (v. v. in collibus humidis prope Simon's Bay.)

*2. M. *capitulata,* involucris æquilateralibus coloratis acutis semi-exsertis pubescentibus 8—10-floris, stigmate apice conico-incrassato! laminis calycis plumosis, foliis acutis integerrimis.

Hab. In Africâ Australi. *Gul. Roxburgh, M.D.* (v. s. in Herb. Banks.)

Desc. *Frutex* erectus. *Rami* pubescentes. *Folia* elliptico-lanceolata, vix uncialia, pubescentia, haud sericea, ciliata, floralia parùm latiora; *Involucra* foliis paulò longiora; *Bracteis* ellipticis, acutis, rubris, tenuissimè pubescentibus. *Calyces* involucro vix longiores. *Styli* calycibus ferè duplo longiores apice parùm incrassato tetragono subfusiformi. *Stigma* stylo nodulo articuliformi connexum, cylindraceum, sulcatum, apice duplo crassiore conico-capitato.

*3. M. *pauciflora,* involucris subæquilateralibus coloratis acutis villosiusculis subquadrifloris, calycibus pistilla æquantibus! laminis nudiusculis, stigmate cylindraceo, foliis obtusis integerrimis sericeis.

Hab. In Africâ Australi. *Gul. Roxburgh, M.D.* (v. s. in Herb. Lambert.)

Desc. *Frutex* erectus. *Rami* villosi, vestiti. *Folia* imbricata, frequentia, ovalia, plana, uncialia, venis altè immersis adversus lucem tantummodò obviis. *Involucra* [107 cylindracea, foliis sesquilongiora. *Bracteis* membranaceis, rubris, extimis obtusis ter brevioribus. *Calyx* involucro ferè unam quartam longior; *Unguibus* hirsutis; *Laminis* glabriusculis, pube brevi adpressâ. *Stylus* calycem vix superans, extra medium angulatus. *Stigma* cylindraceum, sub-emarginatum, crassitie styli, quo cum nodulo connexum.

4. M. *cucullata,* involucris inæquilateralibus subdimidiatis acuminatis glabriusculis, foliis lineari-oblongis tridentatis glabris: floralibus infrà dilatatis marginibus recurvis, stigmate subulato acutissimo.

Scolymocephalus africana, foliis angustis brevioribus, tribus in summitate denticulis, capitulis foliosis interceptis. *Herm. Afr.* 20.

Leucadendros africana s. Scolymocephalus angustiori folio apicibus tridentatis. *Plukn. Alm.* 212, *t.* 304, *f,* 6, bona.

Hypophyllocarpodendron foliis inferioribus apice trifido rubro superioribus penitùs rubris glabris. *Boerh. Lugd. Bat.* 2, *p.* 206, *c. tab.*

Scolymocephalus seu Hypophyllocarpodendron foliis tribus in summitate. *Weinm. Phyt.* 4, *p.* 297, *t.* 905.

Protea foliis lanceolatis obtusis foliis involventibus apice tridentato-callosis. *Roy. Lugd. Bat.* 184.

Leucadendron foliis cuneiformibus apice tridentato-callosis summis ultra florem protensis. *Wachend. Ultraj.* 203.

Leucadendron cucullatum. *Linn. Sp. Pl. ed,* i, *p.* 93; *ed.* ii. *p.* 136. *Berg. Act. Stockh.* 1766, *p.* 320.* *Berg. Cap.* 14.*

Protea cucullata. *Linn. Mant.* 189.* *Thunb. Diss. n.* 17.* *Prod.* 26. *Lam. Illust. Gen.* 1, *p.* 239, *n.* 1258. *Willd. Sp. Pl.* 1, *p.* 514. *Poiret, Encyc. Botan.* 5, *p.* 656.*

108] HAB. In Africæ Australis uliginosis prope Prom. B. Spei. (v. v. juxta Simon's Bay et Constantiam.)

OBS. *Frutex* 2—3 pedes altus. *Folia* vix sesquiuncialia, subavenia; floralia suprà glabriuscula. *Stigma* infra apicem non incrassatum. Varietas foliis unciâ brevioribus sublinearibus.

5. M. *Hartogii,* involucris inæquilateralibus subdimidiatis: bracteis acuminatis pubescentibus: interioribus

tomentosis incanis, foliis lineari-oblongis tridentatis: adultis glabris marginibus niveo-lanatis; floralium apice angustato suprà sericeo, stigmate extra medium fusiformi: acumine setaceo.

Hypophyllocarpodendron; foliis lanuginosis, in apice trifido rubro quasi florescens. *Boerh. Lugd. Bat.* 2, *p.* 205, *c. tab.*

Scolymocephalus seu Hypophyllocarpodendron foliis lanuginosis. *Weinm. Phyt.* 4, *p.* 297, *t.* 906, a.

Protea cucullata β. *Lam. Illust. Gen.* 1, *p.* 239, *n.* 1258.

HAB. In Africæ Australis collibus, prope Prom. B. Spei. (v. v. in montibus juxta False Bay.)

DESC. *Arbuscula* orgyalis. *Rami* patentes, tomentosi. *Folia* frequentia, imbricata, plana, biuncialia et ultra, 8 lineas lata, subvenosa, utrinque tenuissimè pubescentia, pube demùm deciduâ, lanâ marginis persistenti; floralia dimidio inferiore dilatato, oblongo, marginibus reflexis cucullato, capitulum proximè inferius amplexante; superiore breviore, lineari, suprà sericeo, marginibus planis. *Calyx* sesquiuncialis, plumoso-barbatus. *Stylus* calycem superans, sulcato-angulatus. *Stigma* sulcato-quadrangulum sulcis striâ parùm elevatâ. *Receptaculum* paleis subulatis, lanatis.

*6. M. *Hibbertii*, involucris inæquilateralibus subdimidiatis: bracteis obtusis: exterioribus glabris, foliis [109 argenteis oblongo-ellipticis tridentatis integerrimisve.

HAB. In Africæ Australis alpinis humidis, prope Barbiers Kraal. *D. Niven.* (v. s. in Herb. Hibbert., Banks., Lambert.)

DESC. *Frutex* 5—6 pedes altus. *Rami* tomentosi, cinerei. *Folia* imbricata, sessilia, plana, obsoletè venosa, dum duas uncias longa, vix 8 lineas lata. *Involucra* foliis breviora, turbinato-ovata, 7—8-flora. *Bracteis* latè ovatis, exterioribus ciliatis, interioribus sericeis. *Calyx* villosissimus. *Stylus* calyce longior. *Stigma* filiforme, striatum, acutiusculum.

*7. M. *Massoni*, involucris æquilateralibus calyce dimidio brevioribus: bracteis subrotundis obtusis coriaceis foliisque argenteis ovatis integris.

HAB. In Africæ Australis montibus prope Franche Hoek. *Masson.* (v. s. in Herb. Banks.)

DESC. *Frutex* erectus. *Rami* sericei. *Folia* imbricata, frequentia, plana, holosericea, obsoletè venosa, biuncialia, sesquiunciam lata, callo apicis nudiusculo. *Involucra* vix semuncialia, globosè ovata, circiter octo-flora ; *Bracteis* fructiferis induratis. *Calyx* villis longis sub-adpressis incanus. *Stylus* calyce longior. *Stigma* filiforme, acutum, striatum, vix crassitie styli. *Receptaculum* villosum, angustum, epaleatum.

†† *Capitula terminalia. Mimetes spuriæ.*

8. M. *thymelæoides,* caule erecto, foliis ovalibus obtusis pubescentibus semunciâ brevioribus, capitulis subaggregatis, stylis infra medium pubescentibus.

Leucadendron thymelæoides. *Berg. Act. Stockh.* 1766, *p.* 324.* *Berg. Cap.* 19.*

110] HAB. In Africâ Australi, prope Promont. B. Spei. (v. s. in Herb. Banks.)

DESC. *Frutex* ramosissimus. *Rami* stricti, vestiti. *Folia* imbricata, vix unguicularia, subavenia, inferiora glabra. *Capitula* sessilia, globosa, magnitudine vix cerasi nigri. *Bracteæ* involucri lanceolato-ellipticæ. *Paleæ* undique densè lanatæ. *Calyx* sericeo-lanatus. *Stylus* calyce longior. *Stigma* acutiusculum.

9. M. *myrtifolia,* caule erecto, foliis lineari-oblongis obliquis integris v. 2—3-dentatis unciâ brevioribus, stylo glabro, capitulis subsolitariis.

α. foliis tomentosis, passim 2—3-dentatis, bracteis acuminatis.

β. foliis glabriusculis, summis capitulo parùm longioribus, bracteis obtusiusculis.

Protea myrtifolia. *Thunb. Diss. n.* 50*? *Prod.* 27. *Willd. Sp. Pl.* 1, *p.* 530. *Poiret, Encyc. Botan.* 5, *p.* 641.

HAB. In Africâ Australi. (v. s. in Herb. Banks. et Soc. Linn.)

DESC. α. *Frutex* parvus. *Rami* brunnei, adulti glabri, juniores villosi. *Folia* avenia, tenuissimè pubescentia v.

glabra. *Capitula* turbinata, sessilia, solitaria v. pauca aggregata, piso vix duplò majora, multiflora. *Bracteæ* involucri pubescentes, ciliatæ; exteriores ovato-lanceolatæ, acumine brevi; interiores oblongo-ellipticæ, obtusiusculæ. *Calyx* tetraphyllus, plumoso-villosus. *Pistillum* calyce longius. *Stigma* crassitie styli. *Squamulæ* hypogynæ subulatæ, persistentes. *Nux* elliptica, vix compressa, tenuissimè pubescens, basi styli terminata: cortex membranaceus, tenuis, albus, separabilis apice rugoso, putamen crustaceum, nigro-fuscum. *Nucleus* integumento simplici, tenuissimo. *Chalaza* apicis lata, venis radiantibus. *Receptaculum* planum, villosum, epaleatum.

10. M. *divaricata*, caule procumbente, foliis ovalibus an obtusis pubescentibus, stylo glabro.

a. bracteis oblongo-linearibus obtusis semifoliaceis, laminis calycis sericeis.

Scolymocephalos africanus argenteus, foliis brevioribus, myrtiformibus, capitulis rarioribus. *Herm. Afr.* 20.

Leucadendron divaricatum. *Berg. Act. Stockh.* 1766, *p.* 324.* *Berg. Cap. p.* 19.*

Protea divaricata. *Linn. Mant.* 194.* *Thunb. Diss. n.* 57.* *Prod.* 27. *Lam. Illust. Gen.* 1, *p.* 235, *n.* 1221. *Poiret, Encyc. Botan.* 5, *p.* 643. *Willd. Sp. Pl.* 1, *p.* 533.

β. bracteis lanceolatis acutiusculis subscariosis.

HAB. In Africæ Australis campis et collibus, ubique prope Promont. B. Spei. (v. v. ad latera montium, juxta Simon's Bay.)

OBS. Calyx tetraphyllus. Receptaculum epaleatum.

11. M. *purpurea*, caule procumbenti, ramis adscendentibus, foliis lineari-subulatis canaliculatis, laminis calycis glabris.

Protea foliis linearibus simplicissimis ramis determinatis floribus terminatricibus. *Roy. Ludg. Bat.* 186.

Leucadendron proteoides. *Linn. Sp. Pl. ed.* i, *p.* 91.* (fid. spec. tunc in Herb.) *ed.* ii, *p.* 134.* *Berg. Act. Stockh.* 1766, *p.* 326.* *Berg. Cap.* 24.*

Protea purpurea. *Linn. Mant.* 195.* *Thunb. Diss.*

n. 26.* *Prod.* 26. *Lam. Illust. Gen.* 1, *p.* 238, *n.* 1252. *Willd. Sp. Pl.* 1, *p.* 518. *Poiret, Encyc. Botan.* 5, *p.* 654.

HAB. In Africæ Australis collibus, prope Promont. B. Spei ; frequens. (v. v. ad latera montium, prope Simon's Bay.)

OBS. I. Receptaculum epaleatum.

OBS. II. Variat Caule erectiusculo ; Foliis undique versis 112] et secundis ; Bracteis acumine subulato, longo, brevissimo, vel nullo.

8. SERRURIA.

Salisb. Parad. SERRARIA. *Burm. Afr. Adans. Fam.*

GEN. CHAR. *Calyx* quadrifidus, subæqualis, unguibus distinctis. *Stigma* verticale, glabrum. *Squamulæ* quatuor hypogynæ. *Nux* brevissimè pedicellata, ventricosa. *Capitulum* indefinitè multiflorum ; *paleis* persistentibus, imbricatis.

HABITUS. Frutices. Folia *filiformia, trifido-pinnatifida, rarò indivisa.* Capitula *terminalia v. e summis alis, simplicia, nunc composita partialibus congestis v. pedunculo communi diviso corymbosa.* Involucrum *imbricatum, membranaceum, floribus sæpissimè brevius, in paucis longius, quandoque nullum.* Flores *semper sessiles, purpurei.* Pistillum *longitudine calycis.* Stigma *clavatum, rariusve cylindraceum.* Nux *ovalis, tenuiter pubescens, modò barbata, aliquando glabriuscula.*

OBS. Secundum Cl. Salisburium, "Flores interdum pedicellati," quod nunquam observare licuit.

† *Capitula simplicia ; Pedunculi indivisi v. nulli.*

*1. S. *glaberrima,* capitulis axillaribus pedunculatis, bracteis laminisque calycis glabris, foliis indivisis passimque trifidis, caule procumbente.

HAB. In Africæ Australis umbrosis montium. *Masson.* Kleine Hoot. Hoek. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn. et Banks.)

DESC. *Frutex* prostratus, glaber. *Rami* filiformes, sub-flexuosi. *Folia* alterna, remotiuscula, ramis parùm graciliora, 2—3 uncias longa. *Capitula*, erecta, sub-octoflora, pedunculo bracteato parùm breviora. *Bracteæ* propriæ subrotundæ, mucronatæ, cucullatæ, glabræ, scariosæ. *Calyx* [113 strictus, unguibus villosiusculis.

*2. S. *cygnea*, capitulis axillaribus terminalibusque pedunculatis, bracteis glabris subciliatis, calycibus curvatis sericeis, foliis bipinnatis, caule procumbente.

α. Capitula floribus viginti pluribusve: bracteis involucrantibus nullis.

β. Capitula floribus viginti paucioribus: bracteis involucrantibus nonnullis, lanceolato-ovatis.

Hab. In Africâ Australi prope Winterhoek et alibi. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn., *β* in Herb. Banks.)

Desc. *Frutex* procumbens, ramosus, glabriusculus. *Folia* sesquiunciam longa, quandoque biuncialia, superiora interdum breviora. *Pedunculi* capitulo longiores, bracteis distantibus, sæpiùs curvati. *Capitula* globosa, magnitudine cerasi; *Bracteis* propriis latè ovatis, acuminatis. *Calyx unguibus* sigmoideo-curvatis; *Laminis* nutantibus. *Stylus* pariter arcuatus. *Stigma* pendulum.

*3. S. *acrocarpa*, capitulis axillaribus pedunculatis, bracteis tomentosis, calycibus curvatis sericeis, nucibus basi pubescenti styli mucronatis, foliis bipinnatifidis, caule erecto.

Hab. In Africâ Australi, Brant-fly plain. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

Desc. *Frutex* bipedalis et ultrà. *Ramuli* pubescentes. *Folia* biuncialia, adulta glabra. *Pedunculi* capitulo longiores, sæpè curvati, bracteis glabris distantibus, apice tenuissimè pubescentes. *Capitulum* magnitudine cerasi: *Bracteis* propriis ovato-subrotundis, breviter acuminatis, involucrantibus paucis similibus. *Stylus* basi incrassatâ [114 apice arcuato. *Stigma* pendulum. *Nux barbata* pilis strictis patulis.

*4. S. *elevata*, capitulis axillaribus pedunculo brevioribus, bracteis cuneato-orbiculatis tomentosis, calycibus breviter barbatis curvatis, nucibus submuticis, foliis bipinnatis unciâ longioribus, caule erecto.

Hab. In Africæ Australis arenosis. *Masson.* Picket Berg. *Gul. Roxburgh, M.D.* (v. s. in Herb. Banks., et Soc. Linn.)

Desc. *Frutex* orgyalis. *Rami* tomentosi, cinerei. *Folia* frequentia, pilosiuscula, viridia, inferiora glabra, sesquiuncialia, callis obtusiusculis. *Pedunculi* folia sæpissimè superantes, quandoque 3-unciales, tomentosi, cinerei, bracteis alternis, lanceolatis, patentibus. *Capitulum* magnitudine cerasi, floribus viginti pluribus, semunciâ brevioribus. *Bracteæ* omnes extùs sericeo-tomentosæ. *Nux* submutica, mucronulo vix manifesto, barbata.

Obs. Descriptio e plantâ Massoni: Roxburgiana paulò diversa, *Calycibus* quandoque sericeis; *bracteis* mucrone longiore; *pedunculis* brevioribus, paucioribus; *foliis* recentioribus magis hirsutis: fortè species distincta.

*5. S. *Aitoni*, capitulis axillaribus subterminalibus pedunculo brevioribus, bracteis cuneato-subrotundis mucronatis glabriusculis, calycibus plumosis, nucibus mucronatis, foliis tripartito-bipinnatis sericeis unciâ brevioribus, caule erecto.

Hab. In Africâ Australi. *D. Masson.* (v. s. in Herb. D. Aiton.)

Desc. *Rami* stricti, pedales, tomentosi, vestiti. *Folia* erecta, frequentia, 8—10 lineas longa, subargentea tomento 115] arctè adpresso, profundè trifida, laciniis bipinnatifidis, intermediâ parùm longiore magisque divisâ, lacinulis intùs sulco tenui, apiculis subrecurvis, callo obtusiusculo. *Pedunculi* e summis alis et terminales, corymbosi, unciales et ultrà, tomento brevissimo cinerei, bracteis alternis e basi erectâ lanceolatâ subulatis, recurvis. *Capitula* globosa, magnitudine ferè juglandis, floribus viginti pluribus. *Bracteæ* exteriores acumine longiore, interiores latiores, omnes glabriusculæ, subciliatæ. *Calyx* 7—8 lineas longus, unguibus laminisque plumoso-barbatis. *Stigma* clavatum, oblongum. *Nux* villis strictis sericeis barbata, basi styli mucronata. *Squamulæ* hypogynæ quatuor, subulatæ, persistentes.

*6. S. *simplicifolia*, capitulis terminalibus pedunculatis, bracteis villosis, calycibus barbatis, foliis indivisis rariùsve trifidis, caule erecto.

HAB. In Africæ Australis arenosis: Roode Zant Cascade. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

DESC. *Fruticulus* pedalis, sesquipedalis, simplex v. subramosus, glaber, apicem versus tenuissimè pubescens. *Folia* uncialia sesquiuncialia, canaliculata, pleraque indivisa, aliqua passim trifida, juniora hirsuta; radicalia elongata, crassiora, canali latiore. *Pedunculi* solitarii, capitulo longiores, incano-tomentosi; *bracteis* glabriusculis, lanceolatis, distantibus. *Capitulum* magnitudine cerasi, floribus circiter viginti. *Bracteæ* subrotundæ, breviter acuminatæ, tomentosæ, subincanæ. *Calyx* densè plumosus, niveus. *Stigma* subcylindraceum.

*7. S. *diffusa*, capitulis terminalibus pedunculatis, bracteis lanceolato-ovatis acuminatis, calycibus barbatis, foliis trifidis v. pinnatifidis subindè simplicibus uncialibus [116 ramisque glabris, caule procumbente.

HAB. In Africæ Australis arenosis saxosis; in elevatioribus prope Roode Zant. *Gul. Roxburgh, M.D.* Prope Wilde River. *D. Niven.* (v. s. in Herb. Soc. Linn., et Hibbert.)

DESC. *Frutex* diffusus, pedalis bipedalis. *Folia* vix sesquiuncialia, dum pinnatifida laciniis quinque indivisis. *Pedunculi* solitarii, tomentosi, capitulo vix longiores; *bracteis* angustè lanceolatis, concavis, patulis, glabris. *Capitulum* magnitudine cerasi, floribus circiter viginti. *Bracteæ* lanceolato-ovatæ, acuminatæ, villosæ, scariosæ; extimæ angustiores, glabriusculæ. *Calyx* unguibus laminisque plumosis. *Stigma* clavato-cylindraceum.

8. S. *pinnata*, capitulis terminalibus axillaribusque pedunculatis subaggregatis, bracteis lanceolatis acuminatis villosis dimidio calyce longioribus, calycis unguibus sub-

sericeis: laminis apice barbatis, foliis pinnatifidis trifidisve unciâ longioribus, caule procumbente piloso.

Protea pinnata. *And. Repos.* 512? sed folia nimis longa.

HAB. In Africæ Australis montibus aridis; in ascensu Paarl Berg. *D. Niven.* (v. s. in Herb. Hibbert.)

DESC. *Frutex* totus prostratus, basi divisus, ramis pedalibus, pubescentibus. *Folia* secunda, erecta, subsesquiuncialia, sæpiùs pinnatifida, laciniis quinque, passim trifida, pilosiuscula, callis acutis. *Pedunculi* e summis alis et terminales, capitula subæquantes, adscendentes, tomentosi, bracteis alternis, ovato-lanceolatis, acuminatis, glabriusculis. *Capitula* globosa, magnitudine ferè juglandis, multiflora. *Calycis* laminæ infrà sericeæ, apice penicillatim barbatæ. *Stigma* erectiusculum, subclavatum, apice dilatato cavo.

117] *9. S. *arenaria*, capitulis terminalibus pedunculo longioribus, bracteis lanceolato-ovatis acuminatis villosis, calycis laminis tribus plumoso-barbatis quartâ subimberbi; unguibus nudiusculis, foliis trifidis pinnatifidisve unciâ brevioribus, caule pubescenti.

HAB. In Africæ Australis arenosis montium. Tygerhoek Hill, Blue berg, &c. *Gul. Roxburgh, M.D.* & *D. Niven.* (v. s. in Herb. Soc. Linn. et D. Hibbert.)

DESC. *Frutex* erectus v. decumbens, pedalis, parùm ramosus. *Folia* frequentia, laciniis indivisis, sæpè secunda. *Pedunculi* solitarii, capitulo dimidio breviores. *Ungues* calycis glabri v. pilis raris patentibus.

10. S. *cyanoides*, capitulis terminalibus pedunculo longioribus, bracteis orbiculato-ovatis acuminatis villosis, calycis laminis tribus longitudinaliter plumoso-barbatis quartâ nudiusculâ, foliis patulis: superioribus subbipinnatifidis vix uncialibus; inferioribus brevioribus trifidis, caule erectiusculo.

Cyanus æthiopicus rigidis capillaceis tenuissimis foliis trifidis ex Prom. B. Spei. *Plukn. Mant.* 61, *t.* 345, *f.* 6, fid. spec. in ejus Herb.

Protea foliis linearibus ramosis. *Roy. Lugd. Bat.* 186. *Wachend. Ultraj.* 202.

Leucadendron cyanoides. *Linn. Sp. Pl. ed.* i, *p.* 93; *ed.* ii, *p.* 137. *Berg. Act. Stockh.* 1766, *p.* 326. *Berg. Cap.* 27.*

Protea cyanoides. *Linn. Mant.* 188.* *Herb. Linn.*

Protea cyanoides. *Lam. Illust. Gen.* 1, *p.* 239, *n.* 1263. *Poiret, Encyc. Botan.* 5, *p.* 658, fortè diversa species.

Hab. In Africæ Australis collibus, prope Promont. B. Spei. (v. v. ad latera montium juxta Simon's Bay.)

Desc. *Frutex* humilis. *Ramuli* glabriusculi v. tenuissimè pubescentes. *Folia* vix uncialia, pilosiuscula, demùm [118 glabra. *Pedunculi* solitarii, tomentosi, capituli sæpiùs dimidio breviores, nunc subæquantes, bracteis alternis. *Capitulum* magnitudine cerasi majoris, folia superiora superans. *Bracteæ* scariosæ, villis adpressis, acumine subulato breviore. *Stigma* clavato-cylindraceum.

*11. S. *furcellata*, capitulis terminalibus pedunculatis, bracteis lanceolatis: exterioribus pedunculisque glabris; interioribus villosis, calycibus barbatis, foliis unciâ longioribus trifidis: laciniis 2—3-fidisve fastigiatis ramisque glabris, caule erecto.

Hab. In Africâ Australi. *Gul. Roxburgh, M.D.* (v. s.)

Desc. *Rami* virgati. *Folia* alterna, sesquiuncialia, ad medium trifida, laciniis modicè patentibus, vix sulcatis, callo brevi acuto, lateralibus bifidis, intermediâ sæpiùs trifidâ. *Pedunculi* capitula subæquantes, bracteis lineari-lanceolatis, imbricatis, glabris, vestiti. *Capitulum* magnitudine cerasi nigri. *Stigma* cylindraceo-clavatum.

Obs. Valdè affinis sequenti.

*12. S. *scariosa*, capitulis terminalibus pedunculatis, bracteis lanceolatis glabriusculis calyces sericeos æquantibus apice patulis, pedunculis squarrosis, foliis bipinnatis laciniisque divaricatis ramisque glabris, caule erecto.

Protea sphærocephala. *Poiret, Encyc. Botan.* 5, *p.* 658,* secund. descript. synonyma autem omnia excludenda.

Hab. In Africâ Australi; in depressis, rariùs. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

Desc. *Rami* rubicundi, parùm flexuosi. *Folia* sesquiunciam longa, pinnarum lacinulis paucis, subfastigiatis, callo acuto; superiora modicè patentia. *Pedunculi* sub-119] umbellati, capitulo paulo longiores, pilosiusculi, bracteis lanceolatis, glabris, divaricatis. *Capitulum* globosè-ovatum, magnitudine cerasi minoris; *Bracteis* omnibus scariosis, glabriusculis, carinatis, apice acuto, patulo. *Calyx* villis arctè adpressis sericeus. *Stigma* subcylindraceum.

13. S. *pedunculata,* capitulis terminalibus pedunculatis, bracteis latè ovatis tomentosis, calycibus curvatis plumoso-barbatis: laminâ interiori villis adpressis sericeâ, foliis bi-tripinnatifidis cauleque erecto hirsutis.

Protea pedunculata. *Lam. Illust. Gen.* 1, *p.* 240, *n.* 1264.

Protea sphærocephala A. *Poiret, Encyc. Botan.* 5, *p.* 658.

Protea glomerata. *And. Repos.* 264, bona quoad faciem sed stigma nimis inclinans.

Hab. In Africæ Australis montosis; solo fertiliori; Roode Zant Cascade. *Gul. Roxburgh, M.D.* (v. s. in Herb. Banks., Lambert., Hibbert., et Soc. Linn.)

Desc. *Frutex* quandoque orgyalis. *Rami* stricti, pubescentes. *Folia* frequentia, sesquiunciam longa, pube decumbenti v. patulâ, annotino-interrupta. *Pedunculus* terminalis, dum plures aliqui axillares, capitulo sæpiùs longiores, raró nulli, ramulis floriferis tunc foliis nanis instructis. *Capitulum* magnitudine ferè juglandis. *Calyx* densissimè barbatus, villis strictis, patulis. *Stigma* cylindraceo-clavatum.

*14. S. *scoparia,* capitulis terminalibus pedunculatis, bracteis latè-ovatis villosis, calycibus barbatis, foliis triternatis patulis unciâ brevioribus ramisque hirsutis, caule decumbente.

Hab. In Africæ Australis depressis arenosis et saxosis;

inter 24 Rivers et Fontainage Flat. *Gul. Roxburgh,* [120 *M.D.* (v. s. in Herb. Soc. Linn. et D. Hibbert.)

DESC. *Rami* adscendentes, demùm glabriusculi. *Folia* 8—10 lineas longa, subdivaricata, ad medium trifida, laciniis subbipinnatis, lateralibus intermediam æquantibus. *Calycis* ungues hirsuti; laminæ densiùs barbatæ, interioris barbâ breviore. *Stigma* clavatum.

15. S. *hirsuta,* capitulis terminalibus pedunculo longioribus, bracteis lineari-lanceolatis hirsutis, calycibus plumoso-barbatis, foliis bipinnatis uncialibus, ramis hirsutis, caule erecto.

Protea phylicoides. *Thunb. Diss. n.* 9.* *Prod.* 25. *Willd. Sp. Pl.* 1, *p.* 510, excluso synonymo Bergii.

HAB. In Africæ Australis collibus saxosis, prope Prom. B. Spei. (v. v. juxta Simon's Bay.)

DESC. *Frutex* 2—3 pedes altus. *Rami* umbellati, stricti, villis patulis, persistentibus, hirsuti. *Folia* frequentia, quandoque sesquiuncialia, modicè patentia, juniora hirsuta, adulta glabra, laciniis acutissimis. *Pedunculi* solitarii v. sæpè uno plures, capitulo dimidio breviores, bracteis lanceolato-subulatis, divaricatis. *Capitulum* magnitudine ferè juglandis, folia superiora superans. *Calyx* leviter arcuatus, barbâ laminæ interioris breviore. *Stigma* clavato-cylindraceum.

*16. S. *stilbe,* capitulis terminalibus subsessilibus ovatis, bracteis hirsutis ovatis acumine recurvo, calycibus barbatis, foliis 2—3-ternatis unciâ brevioribus, ramis pubescentibus, caule erecto.

α. folia subbiternata, semunciâ breviora, imbricata, [121 adulta glabra; bracteæ pilosiusculæ; nuces glabriusculæ.

β. folia biternata, ferè semuncialia, subimbricata ramique hirsuta; bracteæ nucesque barbatæ.

γ. folia subtriternata, semunciâ longiora, patula, ramulorum floriferorum nana; bracteæ nucesque hirsutæ.

HAB. In Africæ Australis montibus saxosis. *Masson,* et *Gul. Roxburgh, M.D.* (v. s. α. in Herb. Banks., β. et γ. in Herb. Soc. Linn.)

Obs. Plantæ hic ut varietates propositæ, fortè species distinctæ.

*17. S. *Niveni*, capitulis terminalibus sessilibus, bracteis lanceolatis: extimis glabris; interioribus sericeis, calycibus barbatis, foliis bipinnatifidis subuncialibus: summis capitulum superantibus ramisque glaberrimis, caule decumbente.

Protea decumbens. *And. Repos.* 349.

Hab. In Africæ Australis montibus saxosis. Swartberg. *D. Niven.* (v. s. in Herb. Hibbert.)

Desc. *Fruticulus* diffusus, spithameus, ramosissimus. *Rami* ramulique teretes, glaberrimi, rubicundi. *Folia* biternata et bipinnatifida, intùs canaliculata, mucronibus laciniarum acutissimis, semipellucidis, innocuis; modicè patentia; ramorum procumbentium secunda. *Capitula* solitaria, subsessilia, globosa, magnitudine cerasi nigri. *Bracteæ* extimæ breviter acumininatæ, extùs glaberrimæ, marginibus tenuissimè ciliatis, dimidio capitulo parùm longiores; reliquæ sericeæ, apicibus glabriusculis. *Calyx* densè barbatus, laminâ interiori villis adpressis sericeâ. *Stigma* cylindraceum, stylo vix crassius.

122] 18. S. *villosa*, capitulis terminalibus sessilibus, bracteis lanceolatis acuminatis tomentosis, calycis laminis barbatis: unguibus tomentosis, foliis subbiternatis: superioribus capitulum superantibus, ramis hirsutis, caule erecto.

Protea villosa. *Lam. Illust. Gen.* 1, *p.* 240, *n.* 1265.

Protea phylicoides. *Poiret, Encyc. Botan.* 5, *p.* 659,* exclusis synonymis Bergii et Thunbergii.

Hab. In Africâ Australi, prope Promont. B. Spei; in montibus prope Simon's Bay. *Gul. Roxburgh, M.D.* In depressis prope Constantiam legi. (v. v.)

Desc. *Frutex* bipedalis et ultra. *Rami* umbellati, stricti, divisi, ultimi hirsuti. *Folia* vix uncialia, trifida; laciniis lateralibus bifidis trifidisve; intermediâ trifidâ, quandoque pinnatâ, mucronibus lacinularum acutissimis, subincurvis: modicè patentia, adulta glabra. *Capitula* solitaria, magnitudine cerasi. *Calycis ungues* tomento arctè adpresso; *Laminæ* penicillatim barbatæ. *Stigma* cylindraceo-clavatum.

*19. S. *fœniculacea*, capitulis terminalibus subsessilibus, bracteis glabris ovatis acuminatis, calycibus sericeis, foliis bipinnatis sesquiuncialibus: superioribus capitulum superantibus; ramisque glabris, caule erecto.

Hab. In Africæ Australis depressis, prope Constantiam, (ubi v. v.)

Desc. *Frutex* bipedalis, ramis umbellatis, rubicundis. *Folia* modicè patentia, laciniis gracili-filiformibus, acutissimis. *Capitula* solitaria, magnitudine cerasi; *pedunculo* brevissimo, bracteis imbricatis tecto, v. nullo. *Bracteæ* breviter ciliatæ. *Calyx* leviter arcuatus, unguibus laminisque argenteo-sericeis villis arctè adpressis. *Stigma* oblongo-clavatum.

Obs. Facie, foliis, bracteis, calycibusque affinitatem [123 quandam cum *S. glomeratâ* habet; sed capitulis semper solitariis distincta.

*20. S. *ciliata*, capitulis terminalibus pedunculo longioribus, bracteis subulatis glabris margine hirsutis dimidio capituli longioribus, calycibus sericeis, foliis subbipinnatis ramisque glabris, caule erecto.

Hab. In Africæ Australis depressis arenosis prope Physsers-Hoek. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

Desc. *Frutex* ramosissimus. *Rami* rubicundi, ultimi tenuissimè pubescentes. *Folia* vix uncialia, modicè patentia, biternata v. subbipinnatifida; superiora capitulum vix æquantia. *Pedunculi* solitarii v. sæpè aggregati, bracteis subulatis squarrosi. *Capitula* turbinato-obovata, ceraso nigro minora. *Bracteæ* extùs glabriusculæ, punctis elevatis scabriusculæ. *Calyx* arcuatus. *Stigma* cylindraceo-clavatum.

*21. S. *congesta*, capitulis terminalibus sessilibus, bracteis subulatis margine hirsutissimis dimidio capituli longioribus, calycibus barbatis, foliis subbiternatis semuncialibus, ramis pilosiusculis, caule erecto.

Hab. In Africæ Australis arenosis, inter Roode Zant et Urbem Cap. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

Desc. *Frutex* ramosissimus. *Rami* sparsi, adulti glabri.

Folia erecta, quandoque pinnatifida, laciniis indivisis. *Capitula* turbinata, vix magnitudine cerasi nigri, sæpiùs aggregata. *Bracteæ* extùs punctis elevatis, crebris, junioribus piliferis. *Calyx* densè barbatus, villis patulis, parallelis. *Stigma* cylindraceo-clavatum.

124] *22. S. *nitida*, capitulis terminalibus pedunculo squarroso duplo longioribus, bracteis capitulo parùm brevioribus: exterioribus subulatis glabris; interioribus villosissimis sericeis, calycis laminis plumoso-barbatis: interiori unguibusque nudiusculis, foliis unciâ longioribus.

Protea cyanoides. *Thunb. Diss. n.* 3*? *Prod.* 25? *Willd. Sp. Pl.* 1, *p.* 507?

Hab. In Africæ Australis montibus. Hottentots-Holland-Kloof. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

Desc. *Frutex* glaberrimus, ramis rubicundis. *Folia* pinnatifida et subbipinnatifida, ferè sesquiuncialia. *Capitula* solitaria, globosa, magnitudine avellanæ. *Calyx* strictus, unguibus perangustis, pilosiusculis; lamina interiori apice barbâ brevi rarâ, reliquis longitudinaliter barbatis, villis terminalibus dimidio laminæ longioribus. *Stigma* cylindraceum.

*23. S. *squarrosa*, capitulis terminalibus axillaribusque, pedunculis ramuliformibus squarrosis, bracteis dimidium capituli superantibus: exterioribus linearibus glabris; interioribus lineari-lanceolatis pilosis, calycis laminis penicillatim barbatis: interiori unguibusque nudiusculis, foliis subbiuncialibus.

Hab. In Africâ Australi. *Gul. Roxburgh, M.D.* (v. s. in Herb. Lambert.)

Desc. *Frutex* erectus, glaberrimus, ramosissimus, ramulis rubicundis. *Folia* bipinnatifida, patentia. *Pedunculi* capitulis parùm longiores; *bracteis* numerosis, divaricatis, inferioribus teretiusculis, foliaceis, superioribus longioribus, linearibus, confertissimis. *Bracteæ* interiores capituli pilis sparsis, patulis, hirsutæ. *Stigma* cylindraceum.

24. S. *phylicoides,* capitulis terminalibus axillaribusque, [125 pedunculis ramuliformibus squarrosis, bracteis dimidium capituli superantibus: extimis lineari-subulatis; interioribus lanceolatis; utrisque glabris, calycis laminis penicillato-barbatis; interiori nudiusculâ; unguibus glabris, foliis sesquiuncialibus.

Leucadendron phylicoides. *Berg. Act. Stockh.* 1766, *p.* 328.* *Berg. Cap.* 29,* desc. opt.

Protea sphærocephala. *Linn. Mant.* 188.* (*Herb. Linn.*) exclus. syn. Bergii.

Protea abrotanifolia. *And. Repos. t.* 507.

HAB. In Africâ Australi. (v. s. in Herb. Linn. et Soc. Linn.)

DESC. *Frutex* erectus, glaberrimus, ramulis rubicundis. *Folia* bipinnatifida, passimque pinnatifida, modicè patentia, quandoque biuncialia. *Pedunculi* (si placeas ramuli floriferi) axillares et terminales, subcorymbosi, capitulis longiores, bracteis foliaceis, subulatis, indivisis, squarrosi. *Capitula* magnitudine avellanæ. *Bracteæ* extimæ punctis elevatis, interiores læves, marginibus nudis rariùsve ciliatis. *Calyx* strictus, unguibus glaberrimis, laminis exterioribus niveo-barbatis, villis terminalibus longitudine antherarum; interiori glabriusculâ. *Stigma* cylindraceum.

*25. S. *æmula,* bracteis capitulo terminali subsessili parùm brevioribus: exterioribus lanceolatis tomentosis ciliatis; interioribus minoribus villosis, calycis laminis omnibus plumoso-barbatis, foliis bipinnatifidis.

HAB. In Africæ Australis montibus prope Franche Hoek. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn. et D. Hibbert.)

DESC. *Frutex* 3—4 pedes altus. (*Niven.*) *Rami* ultimi tomento tenuissimo cinerascentes. *Folia* sesquiuncialia, modicè patentia, glabra, laciniis acutissimis. *Pedunculi* [126 capitulo breviores, quandoque brevissimi; *bracteis* subulatis, tomentosis, divaricatis, squarrosi. *Capitula* magnitudine avellanæ majoris. *Bracteæ* membranaceæ. *Calyx* strictus, unguibus nudiusculis. *Stigma* cylindraceum.

26. S. *florida*, bracteis capitulo pedunculato longioribus: exterioribus glabris oblongo-lanceolatis acuminatis; interioribus inclusis lineari-lanceolatis ciliatis, foliis pinnatifidis bipinnatifidisve.

Protea florida. *Thunb. Diss. n.* 2,* *tab.* 1, bona. *Lam. Illust. Gen.* 1, *p.* 240, *n.* 1271. *Willd. Sp. Pl.* 1, *p.* 506. *Poiret, Encyc. Botan.* 5, *p.* 662.

HAB. In Africæ Australis montibus prope Franche Hoek. *Masson.* (v. s. in Herb. Banks.)

†† *Capitula composita; partialibus congestis.*

*27. S. *decumbens*, caule prostrato foliisque glabris trifidis: laciniis indivisis, capitulis partialibus subquadrifloris.

Protea decumbens. *Thunb. Diss. n.* 1,* *tab.* 1. *Prod.* 25. *Willd. Sp. Pl.* 1, *p.* 506. *Lam. Illust. Gen.* 1, *p.* 239, *n.* 1261. *Poiret, Encyc. Botan.* 5, *p.* 657.

Protea procumbens. *Linn. Suppl.* 116.*

HAB. In Africæ Australis lateribus saxosis montium, prope Promont. B. Spei. (v. v. juxta Simon's Bay.)

DESC. *Frutex* prostratus, glaber, basi divisus. *Rami* elongati, rubicundi, parùm flexuosi, sæpè annotino-articulati. *Folia* alterna, erecta, secunda, biuncialia, infra medium trifida, laciniis subæqualibus. *Pedunculi* terminales et sæpè e summis alis, adscendentes, graciles; bracteis nonnullis, parvis, glabris. *Capitulum* commune sub- 127] conicum, magnitudine ferè juglandis, e quatuor ad sex partialibus imbricatis, breviter pedunculatis, 3—4-floris, quandoque abortione simplex. *Bracteæ* capitulorum partialium orbiculato-ovatæ, acumine brevi, subsericeæ, passimque glabriusculæ. *Calyx* levissimè arcuatus, subsericeus, villis arctè adpressis. *Stigma* cylindraceum.

28. S. *adscendens*, caule procumbente foliisque glabris pinnatifidis bipinnatifidisque, pedunculis partialibus incano-tomentosis, calycibus curvatis.

Protea ascendens. *Lam. Illust. Gen.* 1, *p.* 239, *n.* 1262. *Poiret, Encyc. Botan.* 5, *p.* 658*?

Hab. In Africæ Australis montibus. Kleine-Hoot-Hoek. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

Desc. *Frutex* glaber. *Rami* rubicundi, quandoque adscendentes. *Folia* sæpiùs bipinnatifida, passim pinnatifida, sesquiuncialia, biuncialia. *Pedunculi* communes terminales et interdum e summis alis, capituli dimidio breviores. *Capitulum* obtusè conicum, magnitudine ferè juglandis, compositum partialibus quinque ad septem, imbricatis, breviter pedunculatis, 6—7-floris. *Bracteæ* ovato-lanceolatæ, acumine patulo, glabræ, basi tomentosâ subincanâ. *Calyx* villis adpressis, argenteis sericeus. *Stigma* subcylindraceum.

*29. S. *flagellaris*, caule procumbente foliisque pilosis bipinnatifidis, pedunculis partialibus subtomentosis, calycibus strictis.

Hab. In Africæ Australis campis arenosis lateribusque montium; prope Simon's Bay, (ubi v. v.)

Desc. *Frutex* prostratus, basi divisus. *Rami* elongati, apice adscendentes, adulti glabriusculi. *Folia* erecta, secunda, circiter biuncialia, laciniis patentibus, fastigiatis, hirsutis, pilis patulis, tardiùs deciduis. *Pedunculi* [128 communes terminales; bracteis alternis, subulatis, vix longitudine capituli; quandoque recurvi. *Capitulum* magnitudine juglandis, e partialibus 5—8, racemoso-congestis, 8—10-floris. *Pedunculi* partiales capitulis suis breviores, tomento rariore cinerascentes. *Bracteæ* ovatæ, acuminatæ, pube rarâ appressâ conspersæ, ciliatæ. *Calyx* sericeus, villis adpressis imbricatis. *Stigma* subcylindraceum.

30. S. *rubricaulis*, caule erecto foliisque glabriusculis subbipinnatifidis uncialibus, capitulis partialibus paucifloris, bracteis ovatis acuminatis glabris, pedunculis partialibus pilosiusculis, stigmate cylindraceo.

Protea sphærocephala. *Thunb. Diss. n.* 5*? exclus. syn. omn.

Hab. In Africâ Australi. *Gul. Roxburgh, M.D.* (v. s.)

Desc. *Rami* stricti, rubicundi, glabri, pilisve paucis patulis. *Folia* biternata et subbipinnatifida, erecta, vix sesquiuncialia. *Pedunculus* communis terminalis, capitulo brevior, glaber, bracteis alternis; partiales capitulis suis dimidio breviores, pilosi, quandoque glabriusculi. *Bracteæ* ovatæ, acumine recurvo, glabræ, ciliatæ, scariosæ. *Calyx* sericeus, villis adpressis.

OBS. Valdè affinis *S. adscendenti.*

31. S. *glomerata,* caule erecto foliisque glabris bipinnatifidis unciâ longioribus, capitulis partialibus multifloris, bracteis exterioribus glabris: interioribus subsericeis, pedunculo communi squarroso, stigmate clavato.

Serraria foliis tenuissimè divisis capitulis tomentosis. *Burm. Afr. p.* 265, *t.* 99, *f.* 2, mala.

Leucadendron Serraria. *β. Linn. Sp. Pl. ed.* i, *p.* 94.

129] Leucadendron glomeratum. *Linn. Sp. Pl. ed.* ii, *p.* 137, (omissum in Syst. Nat. ed. xii.) *Berg. Act. Stockh.* 1766, *p.* 328.

Protea glomerata. *Linn. Mant.* 187.* *Herb. Linn.*

Protea patula. *Thunb. Diss. n.* 4*?

HAB. In Africæ Australis collibus saxosis, prope Promont. B. Spei. (v. s. in Herb. Linn., Banks., Soc. Linn.)

DESC. *Frutex* ramis rubicundis. *Folia* modicè patentia, quandoque biuncialia, glaberrima. *Pedunculi communes* sæpè aggregati, bracteis patulis, latè-ovatis, acuminatis, glabris squarrosi, capitula subæquantes; *partiales* capitulis suis breviores; utrique pubescentes. *Capitula* partialia magnitudine pisi majoris, bracteis densissimè imbricatis, subrotundis, acuminatis. *Calyx* sericeus, villis adpressis.

32. S. *decipiens,* caule erecto ramulis pubescentibus, foliis bipinnatifidis uncialibus et ultra, capitulis partialibus paucifloris communique breviter pedunculatis, bracteis omnibus villosissimis, calycibus sericeis.

α. Frutex 4—5-pedalis, foliis sesquiuncialibus biuncialibusque.

β. Frutex 1—2-pedalis, foliis uncialibus, bractearum acumine glabro.

HAB. In Africæ Australis planitiis elevatioribus arenosis. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

Desc. *Frutex* ramosissimus, ramis tenuissimè pubescentibus. *Folia* patentia, superiora capitula superantia. *Capitula communia* sæpè aggregata; *partialia* 5—6-flora; *Bracteæ* ovatæ, villis longis, decumbentibus incanæ, acumine subulato, nunc glabro. *Calyx* curvatus.

33. S. *compar*, caule erecto ramis glabris, foliis bipinnatifidis unciâ longioribus, capitulis partialibus paucifloris [130 communique breviter pedunculatis, bracteis tomentosis, calycibus barbatis.

Hab. In Africâ Australi. (v. s.)

Obs. Nimis affinis *S. decipienti*. Differt præsertim ramis glabris, calycibus barbatis villis brevissimis patulis, bracteis exterioribus tenuissimè tomentosis, acumine recurvo.

34. S. *Roxburgii*, caule erecto, foliis triternatis fastigiatis semunciâ brevioribus, capitulo communi partialibusque sessilibus paucifloris.

Hab. In Africâ Australi, prope Pardberg in Swartland. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

Desc. *Frutex* 3—4-pedalis, ramosissimus. *Rami* umbellati, spithamei, pubescentes. *Folia* adulta glabra, patula, flabelliformia, lacinulis acutissimis. *Capitulum* terminale, sæpè magnitudine juglandis minoris, quandoque vix cerasi. *Bracteæ* lanceolato-ovatæ, acuminatæ, villosissimæ, incanæ, acumine nudiusculo. *Calyx* argenteo-sericeus, villis laxiùs adpressis. *Stigma* cylindraceo-clavatum.

††† *Pedunculi divisi. Capitulis distinctis, corymbosis v. racemosis.*

35. S. *candicans*, capitulis racemosis paucifloris, pedunculis partialibus calyce barbato brevioribus, foliis bipinnatifidis ramulisque incanis.

Hab. In Africâ Australi. (v. s.)

Obs. Facies *S. Burmanni* β, eique quam maximè affinis.

36. S. *Burmanni*, capitulis corymbosis subdecemfloris, calycibus fastigiatis sericeis apiceve nudiusculis pedunculo

partiali brevioribus, foliis bipinnatifidis setaceis vix biuncialibus.

131] *α*. Ramis foliisque pilosiusculis; capitulis turbinatis, bracteis acumine glabriusculo; calycis laminis demùm nudiusculis.

Abrotanoides arboreum monamotapense floribus in ramulorum cymis. *Plukn. Mant.* 1, *t.* 329, *f.* 1, fide specim. in illius Herb.

Serraria foliis tenuissimè divisis floribus rubris apetalis. *Burm. Afr. p.* 264, *t.* 99, *f.* 1, mala, nisi quoad figuram capitulorum.

Leucadendron Serraria *α*. *Linn. Sp. Pl. ed.* i, *p.* 93; *ed.* ii, *p.* 137.

Protea Serraria. *Linn. Mant.* 188.* *Herb. Linn. Thunb. Diss. n.* 6.* *Prod.* 25. *Willd. Sp. Pl.* 1, *p.* 508. *Lam. Illust. Gen.* 1, *p.* 240, *n.* 1268. *Poiret, Encyc. Botan.* 5, *p.* 660.

β. Ramis foliisque subsericeis; capitulis basi obtusis, bracteis totis calycibusque sericeis.

Hab. In Africæ Australis depressis sterilibus, et ad latera montium. *α*. ubique. *β*. rariùs; fortè distincta species: (*α*. v. v. juxta Simon's Bay. *β*. v. s. in Herb. Soc. Linn. et D. Hibbert.)

37. S. *triternata*, corymbis compositis, capitulis globosis; floribus viginti pluribus imbricatis, bracteis pedunculisque partialibus sericeis, foliis triternatis digitalibus cauleque glaberrimis.

Protea triternata. *Thunb. Diss. n.* 7.* *Prod.* 25. *Willd. Sp. Pl.* 1, *p.* 509. *Poiret, Encyc. Botan.* 5, *p.* 660.

Protea argentiflora. *And. Repos.* 447, bona.

Hab. In Africâ Australi, prope fluvium ad Roode Zant. *D. Niven.* (v. s. in Herb. Banks., Hibbert., et Soc. Linn.)

Desc. *Frutex* erectus, orgyalis. *Rami* rubicundi crassitie pennæ anserinæ. *Folia* patentia. *Corymbus* 132] paniculatus, foliis sæpiùs longior, ramis glabris, ramulis tomentosis, incanis, subangulatis. *Bracteæ* ad divisuras glabriusculæ, acutæ, patentes. *Capitula* magnitudine cerasi nigri. *Bracteæ* ovatæ, acuminatæ. *Calyx* argenteo-sericeus, villis laxiùs decumbentibus. *Stigma* ovale.

38. S. *elongata,* corymbis simplicibus subcompositisve, pedunculo communi elongato: partialibus bracteisque glabris: acumine subulato recurvo dimidium baseos ovatæ superante, foliis 2—3-pinnatifidis digitalibus.

Leucadendron elongatum. *Berg. Act. Stockh.* 1766, *p.* 327.* *Berg. Cap.* 27.*

Protea glomerata. *Thunb. Diss. n.* 8,* exclus. synon. Linnæi et fortè Burmanni. *Thunb. Prod.* 25. *Willd. Sp. Pl.* 1, *p.* 509, sec. descrip. a Thunb. mutuato.

Protea thyrsoides. *Lam. Illust. Gen.* 1, *p.* 240, *n.* 1267. *Poiret, Encyc. Botan.* 5, *p.* 660.*

Hab. In Africæ Australis montibus. Hottentots-Holland-Kloof. Kleine-hoot-Hoek. *Gul. Roxburgh, M.D.* (v. s. in Herb. Banks. et Soc. Linn.)

Desc. *Frutex* erectus, subramosus, sesquipedalis, glaber. *Folia* (*Crithmi*) ad apicem rami articulive annotini conferta, infrà nulla. *Pedunculus* communis 3—10-uncialis, infra bracteis distantibus, apice corymbosus. *Capitula* globosa, 16—20-flora, superiora præcociora. *Bracteæ* scariosæ, latè ovatæ. *Calyx* sericeus. *Stigma* clavato-oblongum.

39. S. *crithmifolia,* racemis simplicibus, pedunculo communi elongato partialibusque glabris, capitulis subtrigintifloris, bracteis glaberrimis latioribus quàm longis: mucrone brevissimo obtuso erecto, foliis bi-tripinnatifidis digitalibus.

Hab. In Africâ Australi. *D. Niven.* (v. s. in Herb. [133 D. Hibbert.)

Desc. *Frutex* erectus, simplex? *Folia* 3—4-uncialia, laciniis teretiusculis, callo apicis obtuso. *Pedunculus* terminalis, scapiformis, sæpè infra racemum 8—10 uncias æquans, bracteis paucissimis. *Racemus* scapo plerumque brevior, 8—10-florus. *Pedunculi* partiales, capitulo longiores, basi dilatatâ, cum processu scutelliformi racheos articulati. *Capitula* magnitudine avellanæ, globosa. *Calyx*

semuncialis. *Nux* undique pubescens, pedicello brevissimo, glabro, rugoso.

9. NIVENIA.

Paranomus. *Salisb. Parad.*

CHAR. GEN. *Calyx* quadrifidus, æqualis, totus deciduus. *Stigma* clavatum, verticale. *Nux* ventricosa, nitens, sessilis, basi integrâ. *Involucrum* simplici serie tetraphyllum, quadriflorum, fructiferum induratum; *Receptaculo* plano epaleato.

HABITUS. Fructices. Folia *sparsa, inferiora bipinnatifida filiformia; superiora, in quibusdam, indivisa, plana.* Involucra *in spicam rariùsve capitulum terminale digesta, sessilia, bracteâ unicâ subtensa.* Flores *purpurascentes.*

This genus is published by Mr. Salisbury: his primary generic character does not indeed at all differ from that which he has given to Mimetes; in his account of Inflorescence, however, it is evident he understood the genus nearly as I have here proposed it: I should therefore have adopted his name had it appeared to me tenable; but I am disposed to believe that he will, on reconsidering the subject, see the propriety of relinquishing it; for the irregularity or unusual structure, which (if I understand him) he says exists "tot partibus diversis," only takes 134] place in the leaves of a small number of species; on the other hand, the flowers of all are perfectly regular, and that too in opposition to some of the most nearly related genera, while the great uniformity and regularity of inflorescence forms an essential part of its character. I have therefore named it in honour of Mr. James Niven, an intelligent observer and indefatigable collector, to whom botanists are indebted for the discovery of many new species, especially in the two extensive South-African families of Erica and Proteaceæ.

† *Folia superiora indivisa, latiora.*

1. N. *Sceptrum*, foliis obovatis lanceolatisve planiusculis margine simplicibus, calyce sericeo villis adpressis.

Protea Sceptrum Gustavianum. *Sparm. in Act. Stockh.* 1777, *p.* 55, *t.* 1, bona. *Linn. Suppl.* 116. (*Herb. Linn.*)

Protea Sceptrum. *Thunb. Diss. n.* 12.* *Prod.* 25. *Willd. Sp. Pl.* 1, *p.* 511. *Poiret, Encyc. Botan.* 5, *p.* 662.

Protea alopecuroides. *Lam. Illust. Gen.* 1, *p.* 240, *n.* 1272.

Hab. In Africæ Australis summis montibus Hottentots-Holland. (v. s. in Herb. Banks.)

Obs. Involucri fructiferi foliola aucta, indurata.

*2. N. *marginata*, foliis latioribus quàm longis cucullatis marginatis, calyce sericeo villis adpressis, involucri foliolis acutis apice glabriusculis.

Hab. In Africæ Australis montibus. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

Desc. *Frutex*. *Rami* umbellati, stricti, glabri, rubicundi. *Folia* subrotunda, parùm latiora quàm longa, diametro 8—10-lineari, glauca, margine cartilagineo, latiusculo, semi-pellucido (infima nondum visa). *Spica* subsessilis, sesquiuncialis. *Bracteæ* subulatæ, concavæ, glabriusculæ. *Stylus* glaber. *Stigma* clavâ oblongâ. [135

3. N. *spathulata*, foliis latioribus quàm longis cucullatis marginatis, involucri foliolis obtusis, calyce barbato, stylo glabro, stigmate clavato-oblongo.

Protea spathulata. *Thunb. Diss. n.* 58,* *t.* 5. *Prod.* 28. *Lam. Illust. Gen.* 1, *p.* 235, *n.* 1218. *Willd. Sp. Pl.* 1, *p.* 533. *Poiret, Encyc. Botan.* 5, *p.* 642.

Hab. In Africæ Australis montibus, Platte-Kloof. *D. Masson.* (v. s. in Herb. Banks.)

Obs. Folia infima 2—3-pinnatifida, filiformia, canaliculata.

*4. N. *parvifolia,* foliis latioribus quàm longis cucullatis, calycibus barbatis, stylo lanato, stigmate conico-capitato.

Protea Sceptrum. *Lam. Illust. Gen.* 1, *p.* 241, *n.* 1273?

Protea Gustaviana. *Poiret, Encyc. Botan.* 5, *p.* 663? exclus. syn. Sparm. et Linnei.

Protea spathulata. *Thunb. Diss. tab.* 5, quoad figuram.

Hab. In Africæ Australis montibus. *D. Masson.* (v. s. in Herb. Banks., Soc. Linn., Hibbert.)

Desc. *Frutex* ramosissimus. *Rami* umbellati, patentes; ramuli tenuissimè pubescentes. *Folia inferiora* bipinnatifida, filiformia, canaliculata; *reliqua* orbiculato-rhombea, frequentia, glaberrima, diametro vix unguiculari, margine cartilagineo, angusto, crenulato. *Petioli* adpressi, foliis breviores. *Spicæ* terminales, solitariæ, v. aggregatæ, sesquiunciales—biunciales, dum solitariæ sessiles, dum aggregatæ sæpè pedunculatæ. *Involucrum* foliolis subrotundis, fructiferis auctis, induratis. *Stylus* angulatus, dimidio inferiore longiore, lanato. *Stigma* magnum, apice styli duplo crassius, rugosiusculum.

136] †† *Folia omnia bipinnatifida.*

5. N. *spicata,* pedunculis subumbellatis dimidio spicæ cylindraceæ longioribus, bracteis subtendentibus pedunculique ovatis, involucris inferioribus distinctis, stylis ad duas tertias villosissimis, foliis glabris, ramis tomentosis.

Leucadendron spicatum. *Berg. Act. Stockh.* 1766, *p.* 327.* *Berg. Cap.* 25.*

Protea spicata. *Linn. Mant.* 187.* (*Herb. Linn.*) *Thunb. Diss. n.* 11.* *Prod.* 25. *Willd. Sp. Pl.* 1, *p.* 511.

Hab. In Africæ Australis montibus. Hottentots-Holland-Kloof. (v. s. in Herb. Banks.)

Desc. *Frutex* erectus, ramis tenuissimè tomentosis, villis præterea nullis. *Folia* subtriternata, biuncialia, canaliculata, callis obtusis. *Pedunculi* terminales, quandoque solitarii, sæpiùs 3—5 umbellati, tomento villisque brevibus patulis incani; bracteis alternis, numerosis, adpressis; sesquiunciales—biunciales. *Spicæ* sesquiunciales, usque 2½ uncias æquantes. *Involucra* superiora conferta, inferiora distincta; bracteis subtendentibus ovatis, acumine brevissimo; *foliolis* ovatis, acutis, fructiferis auctis, induratis. *Calyx* basi villosus, ungues tomentosi, laminis breviter barbatis. *Stylus* ipsâ basi et tertiâ parte superiore glabris. *Stigma* clavato-ovale. *Nux* ovata, cortice albo nitente tenuissimo; denudata fusca, basi parum incrassatâ, stylo diu terminata.

6. N. *crithmifolia*, pedunculis umbellatis spicas conico-cylindraceas subæquantibus, bracteis subtendentibus ovatis acuminatis, involucris alternis: foliolis obtusis, stylis ad medium villosis, foliis divaricatis glabris.

Protea Lagopus. *And. Repos.* 243.

Hab. In Africæ Australis montibus. *D. Niven.* [137 (v. s. in Herb. Hibbert.)

Obs. Nimis affinis *P. spicato*, et fortè haud distincta species: differt tamen foliis divaricatis, lacinulis latioribus, sursum paulò dilatatis; bracteis pedunculi paucioribus parùmque angustioribus; spicis pedunculo vix longioribus; involucris magis distinctis, foliolis obtusioribus tomento arctè adpresso; styli dimidio superiore glabro.

7. N. *media*, spicis cylindraceis pedunculo quater longioribus, bracteis subtendentibus capitulorum lanceolato-subulatis, involucris inferioribus subdistinctis: foliolis ovatis acutis apice imberbibus, stylo infra medium pubescenti, foliis glabris, ramis tomentosis.

Protea spicata. *And. Repos.* 234?

Hab. In Africæ Australis montibus, frequens. *D. Niven.* (v. s. in Herb. Hibbert.)

Desc. *Frutex* 6—8 pedes altus (*Niven*). *Rami* umbellati, stricti, tomento tenuissimo cinerascentes. *Folia* erecta, sesquiuncialia; inferiora biternata et subtriternata; superiora trifida, laciniis lateralibus subsimplicibus. *Pedunculi* terminales, solitarii, vix unciales, villosi, bracteis lanceolatis, sparsis, erectis, tomentosis. *Spicæ* 3—5 uncias longæ, involucris distinctis, tamen approximatis, foliolis acutissimis, tomento arctè adpresso. *Calyx* tubo tomentoso, involucro ferè ter longiore; laminis villis brevibus, sericeis, subdecumbentibus, barbatis. *Stylus* vix ultra unam tertiam a basi pubescens. *Stigma* gracile, clavatum.

8. N. *Lagopus*, spicis subsessilibus cylindraceis, capitulis imbricatis: bracteis subtendentibus lanceolato-subulatis: 138] involucri subrotundis apice acuto barbato, stylo infra medium pubescente, foliis adultis glabris: junioribus ramulisque pilosis.

Protea Lagopus. *Thunb. Diss. n.* 10.* *Willd. Sp. Pl.* 1, *p.* 510.

Hab. In Africæ Australis montibus. *Gul. Roxburgh, M.D.* (v. s.)

Desc. *Frutex* erectus. *Rami* umbellati. *Folia* vix sesquiuncialia, modicè patentia, biternata. *Spicæ* solitariæ, densæ, 2—4 unciales, pedunculo quandoque semunciali, sæpè brevissimo v. nullo. *Bracteæ* subtendentes apice barbatæ. *Calyx* unguibus tomentosis, laminis barbatis, villis longis, numerosis, patulis. *Stylus* vix ad medium pubescens. *Stigma* ovali-clavatum.

*9. N. *mollissima*, spicis pedunculos vix æquantibus, foliis sericeis triternatis (uncialibus), calycis unguibus tomentosis: laminis barbatis.

Hab. In Africæ Australis montibus. *D. Joh. Roxburgh.* (v. s. in Herb. Banks., Lambert., Soc. Linn.)

Desc. *Frutex* erectus, tomentosus, incanus. *Rami* ramulique tomento arctè adpresso. *Folia* mollissima, profundè trifida, lacinulis fastigiatis. *Pedunculi* terminales, subsolitarii, foliis breviores. *Spicæ* subovatæ, capitulis inferioribus distinctis, bracteis ovatis acutis, involucri similibus, utrisque tomentosis, imberbibus. *Calycis* ungues involucro ferè ter longiores. *Stylus* infra medium pubescens. *Stigma* gracile. *Nux* ovata, cuticulâ albâ nitente tenuissimè pubescente, basi incrassatâ styli diu coronata; involucri foliolis coriaceo-induratis, parùmque auctis, demùm patulis cincta.

*10. N. *capitata*, capitulo communi globoso subsessili, unguibus laminisque calycis barbatis, foliis semuncialibus [139 : ramulorum inferioribus glabris.

Hab. In Africæ Australis montosis, near Brant-fly's Hill. *Gul. Roxburgh, M.D.* (v. s. in Herb. Banks., Lambert., Soc. Linn.)

Desc. *Frutex* erectus, tripedalis et ultrà. *Rami* umbellati, ultimi tomentosi. *Folia* biternata, canaliculata, superiora ramulorum sericea. *Capitula* communia vix magnitudine cerasi nigri, pauciflora, quandoque aggregata breviterque pedunculata. *Involucrum* foliolis lanceolato-ovatis, acutis. *Stylus* medio pubescens, utroque fine glaber. *Stigma* ovali-clavatum.

10. SOROCEPHALUS.

Spatallæ sp. *Salisb. Parad.*

Char. Gen. *Calyx* quadrifidus, æqualis, totus deciduus. *Stigma* verticale, clavatum. *Nux* ventricosa, brevissimè pedicellata v. basi emarginata. *Involucrum* subsimplici serie 3—6-phyllum, definitè pauciflorum v. uniflorum: fructiferum non mutatum. *Receptaculum* epaleatum.

Habitus. Frutices. *Ramis virgatis.* Folia *sparsa, filiformia v. plana, indivisa, infima rariùs bipinnatifida.* Involucra *subsessilia, unibracteata, in spicam capituliformem basi nunc bracteis imbricatis subtensam, congesta.* Flores *purpurascentes.*

Etym. σωρος cumulus, et κεφαλη caput; ob capitula congesta.

Obs. Genus complectens phalanges duas facie et structurâ parùm diversas, quarum *prima* habitu et inflorescentiâ *Spatallæ* proxima, diversa tamen stigmate verticali, calyceque semper regulari: *secunda* e speciebus inter se convenientibus capitulo communi involucrato, sed discrepantibus numero florum foliolorumque involucri partialis, nec non foliis in quibusdam filiformibus, in aliis planis, et in unicâ dimorphis instar Niveniæ: fructus in hujus [140 sectionis duabus speciebus tantummodo observatus, in alterâ (foliis filiformibus) brevissimè pedicellatus, basi obsoletè emarginatâ, tenuissimè pubescens; in alterâ (foliis planis) glaberrimus, sessilis, basi angustatâ, profundè emarginatâ.

† Spica *nudiuscula.* Involucra 1—3-*flora.* Nux *brevissimè pedicellata, basi integrâ.* Folia *filiformia, indivisa.*

*1. S. *setaceus*, involucris unifloris, foliis setaceis incurvis (uncialibus) ramulisque hirsutis.

Hab. In Africâ Australi. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

Desc. *Frutex* erectus. *Rami* virgati, stricti, umbellati. *Folia* frequentia, vix sesquiuncialia, mucrone setaceo, sphacelato: inferiora minùs incurva. *Capitulum* terminale, sessile, ovatum, magnitudine cerasi nigri. *Calyx* unguibus laxiùs tomentosis; laminis barbatis. *Stigma* conico-ovatum.

*2. S. *salsoloides*, involucris unifloris, foliis triquetro-filiformibus incurvis (semuncialibus) glabris.

Hab. In Africâ Australi. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

Desc. *Frutex* erectus, ramosissimus. *Rami* glabri, ramuli tenuissimè pubescentes. *Folia* frequentia, semiteretia, suprà sulcata, mucrone acuto subconcolori. *Capitulum* terminale, sessile, ovatum, vix magnitudine cerasi nigri, bracteolis paucis, brevissimis, lanceato-linearibus, subtensum. *Calyx* barbatus, villis brevibus. *Stigma* erectum v. parùm inclinans.

*3. S. *imberbis*, involucris trifloris, laminis calycis acuminibusque bractearum glabris.

141] Hab. In Africâ Australi. *D. Niven.* (v. s. in Herb. Hibbert.)

Desc. *Frutex* erectus, ramosissimus. *Ramuli* pubescentes. *Folia* glabra, uncialia, modicè patentia, parùm incurva, suprà sulcata, acutè mucronata. *Capitulum* terminale, breviter pedunculatum, subglobosum, magnitudine cerasi nigri. *Bracteæ* lanceolatæ, ciliatæ, acumine subulato, glabro. *Calycis* ungues barbati. *Stylus* strictus. *Stigma* ovato-clavatum; æquale.

*4. S. *spatalloides*, involucris trifloris subpedicellatis, calycis laminis barbatis.

HAB. In Africâ Australi; prope Franche-hoek. *D. Niven*. (v. s. in Herb. Soc. Linn., et D. Hibbert.)

DESC. *Frutex* erectus. *Rami* umbellati, tenuissimè pubescentes. *Folia* modicè patentia, parùm incurva, vix uncialia, juniora pilosa. *Capitula* solitaria v. 2—3 aggregata, breviter pedunculata, ovata v. oblonga, magnitudine avellanæ. *Bracteæ* lanceolatæ, acutæ, pubescentes, apice quandoque glabriusculo. *Calycis* laminæ longiùs barbatæ. *Stylus* apice sæpiùs incurvo, modò rectiusculo. *Stigma* styli hamati parùm inæquale; rectiusculi æquilaterale, ovatum.

†† Spica *subinvolucrata*. Involucra 4—6-*flora*. Nux *basi emarginatâ*.

*5. S. *tenuifolia*, foliis filiformibus (semunciâ brevioribus), capitulis paucifloris, calycis laminis plumoso-barbatis: interiori nudiusculâ.

HAB. In Africæ Australis montosis; in humidis prope Breede River. *D. Niven*. (v. s. in Herb. Hibbert.)

DESC. *Frutex* 3—4 pedes altus (*Niven*), facie *Spatallæ proliferæ*. *Rami* glabri, rubicundi, vestiti; ramuli villosiusculi. *Folia* imbricata, scabriuscula, mucrone acuto; [142 juniora hirsuta. *Capitulum commune* terminale, sessile, magnitudine pisi, e partialibus 2—4 compositum. *Involucra partialia* subimbricata, foliolis lanceolatis, barbatis, apice glabriusculo. *Calyx* profundè quadrifidus, æqualis. *Stylus* strictus. *Stigma* æquilaterale, erectum, ovatum.

6. S. *lanatus*, foliis triquetro-filiformibus (semunciâ longioribus) suprà sulcatis, capitulis multifloris, calycis laminis omnibus plumoso-barbatis.

Protea lanata. *Thunb. Diss. n.* 30,* *t.* 3. *Prod.* 26.

Willd. Sp. Pl. 1, *p.* 519. *Poiret, Encyc. Botan.* 5, *p.* 653.

HAB. In Africæ Australis montosis. Swartland. (v. s. in Herb. Banks.)

DESC. *Frutex* erectus. *Rami* subumbellati, stricti, vestiti, tenuissimè pubescentes. *Folia* imbricata, 5—8 lineas longa. *Capitulum* terminale, solitarium, sessile, globosum, magnitudine avellanæ majoris: *partialia* densissimè congesta, 5—8-flora: *Involucris* 5—7-phyllis, foliolis augusto-lanceolatis, barbatis. *Calyx* profundè 4-fidus, æqualis. *Stylus* strictus. *Stigma* ovatum, æquilaterale, stylo ferè duplò crassius. *Nux* brevissimè pedicellata basique leviter emarginata, tenuissimè pubescens, cortice tenui, rugosiusculo, fusco.

OBS. Variat foliis subtùs triquetris teretibusque, scabriusculis et lævibus.

7. S. *imbricatus,* foliis lanceolatis subtùs scabris, unguibus calycis glanduloso-pilosis, stigmate clavato.

Protea imbricata. *Thunb. Diss. n.* 45, *t.* 5. *Prod.* 27. *Linn. Suppl.* 116.* *Lam. Illust. Gen.* 1, *p.* 235, *n.* 1222. *Willd. Sp. Pl.* 1, *p.* 527. *Poiret, Encyc. Botan.* 5, *p.* 643. *And. Repos.* 527.

143] HAB. In Africæ Australis montibus. (v. s. in Herb. var. et v. in Hort. D. Hibbert.)

DESC. *Frutex* erectus. *Rami* elongati, stricti. *Folia* imbricata, subtùs convexiuscula venoso-striata, suprà concaviuscula lævia, unguicularia, mucrone incurvo. *Capitulum* terminale, sessile, subovatum, solitarium, v. e. 2—3 aggregatis compositum. *Involucrum commune* polyphyllum, imbricatum, capitulo brevius; foliolis lanceolatis, membranaceis, coloratis, scabriusculis. *Involucra partialia* sæpiùs quadriflora, tetraphylla; foliolis lanceolatis, hirsutis. *Calyx* tubo gracili, laminis barbatis. *Ovarium* barbatum. *Stylus* strictus. *Stigma* elliptico-clavatum, hinc gibbosiusculum. *Nux* glaberrima, nitens, fusca, oblonga, basi angustatâ concolori emarginatâ.

*8. S. *diversifolius,* foliis spathulato-lanceolatis subtùs lævibus: infimis bipinnatifidis, unguibus laminisque calycis barbatis, stigmate cylindraceo.

Hab. In Africæ Australis montibus saxosis, prope Goud Rivier. *D. Niven.* (v. s. in Herb. Banks., Lambert., et Hibbert.)

Desc. *Frutex* erectus, glaber, bipedalis usque orgyalis, indivisus, v. bifidus, strictus, crassitie pennæ olorinæ, suprà pubescens. *Folia infima* trifido-bipinnatifida, canaliculata, biuncialia; *reliqua* imbricata, obtusiuscula, parùm concava, vix semuncialia. *Capitulum* terminale, solitarium, sessile, ovatum, obtusum, magnitudine pruni minoris.

11. SPATALLA.

Salisb. Parad.

Char. Gen. *Calyx* quadrifidus, laciniâ interiore (in plerisque) majore, totus deciduus. *Stigma* obliquum, dilatatum. *Nux* ventricosa, brevissimè pedicellata. *Involucrum* simplici serie 2—4-phyllum, uniflorum v. definitè [144 pauciflorum. *Receptaculum* epaleatum.

Habitus. Frutices. Folia *sparsa, filiformia, indivisa.* Involucra *terminalia, spicata v. racemosa, unibracteata, fructifera haud mutata.* Flores *purpurascentes.* Anthera *laciniæ majoris calycis proportionatim major, et in quibusdam unica fertilis.*

† Involucra *uniflora.* Stigma *concavum, cochleariforme.* Calyx *inæqualis.*

*1. S. *mollis,* involucro diphyllo: foliolis integerrimis, foliis strictis ramulisque villosis.

Hab. In Africæ Australis montibus. *D. Joh. Roxburgh.* (v. s. in Herb. Lambert.)

Desc. *Frutex* erectus, ramosissimus. *Rami* rubicundi, ramuli graciles, erecti. *Folia* erecto-patentia, 7—8 lineas longa, callo acutissimo, villis modicè patentibus sericea. *Spica* sessilis, erecta, solitaria, oblongo-cylindracea, densa, racemosa, vix uncialis. *Bracteæ* foliaceæ, pedicellis duplò longiores. *Involucrum* foliolis ovatis, villosis, exteriore latiore. *Calyx* densè barbatus, laminâ laciniæ majoris villis marginalibus inflexis. *Squamulæ hypogynæ* quatuor, lineares, persistentes.

*2. S. *pedunculata*, involucro diphyllo: foliolo latiore tridentato, spicâ imbricatâ, pedunculo foliis longiore triquetris incurvis basi attenuatis, bracteis sericeis involucro brevioribus.

HAB. In Africæ Australis montibus. Kleine-Hoot-Hoek. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

DESC. *Frutex* erectus, ramosissimus, foliis ramisque adultis glabris, junioribus sericeis. *Folia* frequentia, ferè uncialia, basi attenuatâ, erectâ, suprà patentia, falcato-incurva, 145] callo apicis obtusiusculo. *Pedunculi* sesquiunciales, solitarii, sericei; bracteis alternis, subulatis. *Spica* cylindracea, pedunculo vix longior; pedicellis, involucris, calycibusque sericeis.

*3. S. *nivea*, involucro diphyllo: foliolo latiore tridentato, spicâ imbricatâ, pedunculo foliis rectiusculis acutissimis breviore, bracteis foliaceis villosiusculis involucra æquantibus.

HAB. In Africæ Australis montibus. *D. Niven.* (v. s. in Herb. D. Hibbert.)

DESC. *Frutex* erectus, ramosissimus, ramis foliisque adultis glabris, novellis sericeis. *Folia* uncialia, leviter incurva, v. rectiuscula, basi parùm attenuata. *Pedunculi* solitarii, subsericei, bracteis alternis subulatis. *Spica* sesquiuncialis, pedunculo duplò longior. *Involucri* foliolum exterius profundè tridentatum, dente intermedio angustiore. *Calycis* laminæ villis brevibus, patulis, niveis barbatæ.

*4. S. *ramulosa*, involucro diphyllo: foliolo latiore trifido, spicâ subsessili imbricatâ, bracteis superioribus longitudine pedicellorum, foliis acutè mucronatis.

Protea foliis setaceis, floribus racemosis. *Hort. Cliff.* 496?

Leucadendron racemosum. *Linn. Sp. Pl. ed.* i, *p.* 91?

ed. ii, *p.* 194? *Berg. Act. Stockh.* 1766, *p.* 325.* *Berg. Cap. p.* 23.*

Protea racemosa. *Thunb. Diss. n.* 21*? *Prod.* 26?

HAB. In Africæ Australis montibus. Roode Zant Kloof. (v. s. in Herb. Banks., Soc. Linn.)

DESC. *Frutex* erectus, ramosissimus; ramis virgatis filiformibus, foliisque adultis glabris, novellis sericeis. *Folia* frequentia, modicè patentia, parùmque incurva, basi attenuata, vix uncialia, suprà canaliculata, subtùs convexa, callo acuto mucroniformi. *Spica* terminalis, breviter pedunculata, cylindracea, uncialis, sesquiuncialis, densa, subracemosa, floribus omnibus imbricatis, ramulo uno alterove sericeo brevi, sæpissimè stipata. *Bracteæ* omnes pedicellos pariter tomentosos æquantes. *Involucrum* laciniâ mediâ labii majoris angustiore. *Calyx* breviter densèque barbatus, villis marginalibus, laminæ majoris arctè inflexis. *Stigma* cochleariforme, papillâ centrali. [146

*5. S. *laxa*, involucro diphyllo: foliolo latiore trifido, racemo subpedunculato laxiusculo, bracteis superioribus pedicello brevioribus.

HAB. In Africæ Australis montibus. Kleine-Hoot-Hoek. *Gul. Roxburgh, M.D.* (v. s. in Herb. Banks., Lambert., Soc. Linn.)

DESC. *Frutex* erectus, 4—6 pedalis, (*Niven*) ramosus. *Rami* graciles, virgati, rubicundi, ramuli subsericei. *Folia* patenti-erecta, leviter incurva, v. rectiuscula, basi attenuata, callo apicis acutiusculo, v. obtusiusculo, uncialia, inferiora glabra, superiora sericea. *Racemi* breviter pedunculati, solitarii, erecti, sesquiunciales, ramulo brevi quandoque stipati. *Bracteæ* tomentosæ, pedicellis fructiferis breviores; inferiores floriferorum subæquantes. *Involucra* vix longitudine pedicellorum, sericea, fructifera labio majore tripartito, laciniâ intermediâ angustissimâ. *Nux* ovata, subsessilis, sericea, involucro persistenti duplò longior *stylo* curvato diù coronata, basi barbatâ pilis strictis.

*6. S. *bracteata*, involucro diphyllo: foliolo latiore profundè trifido, spicâ pedunculatâ imbricatâ, bracteis teretibus involucra pedicellata superantibus, foliis incurvis (uncialibus) glabriusculis.

147] Protea racemosa. *Linn. Mant.* 187? (*Herb. Linn.*)

HAB. In Africæ Australis montibus. Franche Hoek. (v. s. in Herb. Banks., Lambert., Soc. Linn.)

DESC. *Frutex* erectus, 6—7 pedalis, (*Niven*) ramosissimus, ramulis ultimis sericeis. *Folia* e basi attenuatâ, adpressâ, suprà patentia, et falcato- v. sigmoideo-curvata, callo obtusiusculo, adulta glabra, recentiora sericea, quandoque sesquiuncialia. *Pedunculi* terminales, solitarii, spicâ sesquiunciali breviores. *Pedicelli* imbricati, inferiores involucra æquantes, superiores iisdem parùm breviores. *Involucra* sericea, labio majore sæpè tripartito. *Calyx* unguibus tomento adpresso; laminis barbatis villis modicè patentibus, marginalibus haud inflexis.

*7. S. *sericea*, involucro diphyllo: foliolo latiore tripartito, spicâ sessili imbricatâ: bracteis involucra subsessilia æquantibus, foliis semuncialibus ramulisque sericeis.

HAB. In Africæ Australis montibus. *Gul. Roxburgh, M.D.* (v. s. in Herb. Soc. Linn.)

DESC. *Frutex* erectus, ramosissimus. *Rami* ramulique virgati, stricti, hi sericei, illi glabri. *Folia* frequentia, imbricata, patenti-erecta, rectiuscula v. leviter incurva, suprà obsoletissimè sulcata. *Spicæ* solitariæ, vix unciales. *Involucra* labio majore laciniis subulatis, mediâ augustiore. *Calyx* unguibus tomentosis, laminis barbatis.

8. S. *prolifera*, involucro tetraphyllo: foliolis apice sphacelatis, spicâ conico-capitatâ: floribus subsessilibus.

Protea prolifera. *Thunb. Diss. n.* 27,* *tab.* 4. *Prod.* 26. *Linn. Suppl.* 118. *Lam. Illust. Gen.* 1, *p.* 238, *n.* 1233. *Willd. Sp. Pl.* 1, *p.* 518. *Poiret, Encyc. Botan.* 5, *p.* 654.

148] HAB. In Africæ Australis montibus. Hottentots-Holland: Roode Zant. (v. s. in Herb. Banks., Lambert., Soc. Linn.)

DESC. *Frutex* erectus, sesquipedalis, bipedalis, ramosissimus. *Rami* ramulique umbellati, hi subsericei, illi rubicundi glabriusculi. *Folia* imbricata, conferta, vix unguicularia, ramulorum recentiorum sericea. *Spica* sessilis. *Bracteæ* foliaceæ. *Involucri* foliola subulata, demùm glabriuscula. *Calyx* densissimè barbatus, villis brevibus sericeis; laminâ interiori duplò majori, villis marginalibus arctè inflexis. *Stigma* planiusculum, papillâ centrali. *Squamulæ hypogynæ* quatuor, lineari-subulatæ.

*9. S. *pyramidalis*, involucro tetraphyllo: foliolis acuminatis pedicellos subæquantibus, spicâ erectâ solitariâ sessili oblongo-pyramidali foliis semuncialibus duplò longiore.

Hab. In Africæ Australis montibus, prope Zwellendam. *Gul. Roxburgh, M.D.* (v. s. in Herb. Lambert. et Soc. Linn.)

Desc. *Frutex* erectus, ramosissimus, ramis ramulisque umbellatis, pubescentibus. *Folia* confertissima, modicè patentia, stricta v. parùm incurva, villosiuscula, callo acuto, mucroniformi. *Spica* densa, subuncialis. *Bracteæ* foliaceæ, involucra æquantes. *Involucra* pubescentia, foliolis e latiore basi subulatis, apice patulis, exteriori parùm angustiore. *Calyx* laminâ interiori parùm majori, villis marginalibus simplicibus. *Stigma* concavum, papillâ centrali. *Squamulæ hypogynæ* lineari-subulatæ. *Receptaculum* barbatum.

*10. S. *polystachya*, involucro tetraphyllo: foliolis apice patulis, spicis nutantibus aggregatis pedunculatis, foliis uncialibus curvatis.

Hab. In Africæ Australis montibus. *Gul. Roxburgh,* [149
M.D. (v. s. in Herb. Lambert. et Soc. Linn.)

Desc. *Frutex* erectus, ramosissimus. *Rami* ramulique umbellati, rubicundi, ultimi pubescentes. *Folia* conferta, patula, subsigmoideo-curvata, villosa, mucrone acutissimo, novella sericea. *Spicæ* 4—6, reflexæ, sesquiunciales, breviter pedunculatæ, ramulis umbellatis longioribus stipatæ. *Bracteæ* pedicellis ter longiores. *Involucra* foliolis subæqualibus, concavis, lanceolato-subulatis, acuminatis. *Calyx* subæqualis. *Stigma* planiusculum, papillâ centrali. *Nux* brevissimè pedicellata, tenuissimè pubescens.

†† Involucra 3—4-*flora*. Stigma *convexiusculum*. Calyx *subæqualis*.

11. S. *incurva*, spicis racemosis subpedunculatis, bracteis involucro tomentoso (sub-4-floro) brevioribus, foliis incurvis, calycibus inæqualibus.

α. Spicæ sæpè aggregatæ. Bracteæ pedicellos subæquantes. Folia ferè uncialia, inferiora ramulorum glabra. Protea incurva. *Thunb. Diss. n.* 22,* *tab.* 3, bona. *Willd. Sp. Pl.* 1, *p.* 516. *Poiret, Encyc. Botan.* 5, *p.* 652.

β. Spicæ solitariæ. Bracteæ pedicellos superantes. Folia semuncialia, ferè omnia ramulorum sericea.

HAB. In Africæ Australis arenosis humidis subumbrosis; Roode Zant Cascade. (v. s. *α*. in Herb. Banks., Lambert., Soc. Linn.; *β*. in Herb. Hibbert.)

OBS. I. Calyx inæqualis. Stigma planiusculum, papillâ centrali.

OBS. II. *β*. Forsan distincta species: Foliis confertissimis, pedicellis involucro ferè dimidio brevioribus.

150] *12. S. *propinqua*, spicâ subpedunculatâ, bracteis subulatis foliaceis involucra subsessilia tomentosa subbiflora æquantibus, foliis semuncialibus strictis ramulisque villosis, calycibus subæqualibus.

HAB. In Africâ Australi. *A. Auge.* (v. s. in Herb. Banks.)

OBS. Spica biuncialis. Pedicelli brevissimi. Nux pedicello manifesto, glabro, tenuissimè pubescens.

13. S. *caudata*, spicâ sessili, bracteis involucrisque ovato-lanceolatis glabriusculis ciliatis, foliis glabris acutis.

Protea caudata. *Thunb. Diss.* sec. ic. tab. 2.

HAB. In Africâ Australi; prope Palmetta River. *D. Masson.* (v. s. in Herb. Banks.)

DESC. *Frutex* erectus, ramosissimus; ramis umbellatis glabriusculis. *Folia* vix semuncialia, suprà canaliculata, acuta, stricta. *Spicæ* sæpè aggregatæ, cylindraceæ, densæ, unciales, quandoque biunciales. *Involucra* subsessilia, sæpiùs triflora. *Calyx* subæqualis, barbatus. *Stigma* convexum. *Nux* tenuissimè pubescens.

14. S. *Thunbergii*, spicâ sessili, bracteis involucrisque ovato-lanceolatis villosis, foliis calyce longioribus acutis canaliculatis ramisque pilosis.

Protea caudata. *Thunb. Diss. n.* 23,* secund. descript.

Hab. In Africæ Australis montosis. *D. Niven.* (v. s. in Herb. Hibbert.)

Desc. *Frutex* erectus, ramosissimus. *Folia* vix semuncialia, conferta, imbricata, stricta v. parùm incurva. *Spica* cylindracea, densa, uncialis, sesquiuncialis. *Involucra* brevissimè pedicellata, bracteis parùm longiora, villis persistentibus. *Calyx* subæqualis, laminis brevissimè [151 barbatis, subsericeis. *Stigma* convexum. *Nux* tenuissimè pubescens, pedicello brevissimo, crasso, glabro.

*15. S. *brevifolia*, foliis calyce brevioribus obtusiusculis subsericeis triquetris, spicis densis, bracteis involucrisque pubescentibus.

Hab. In Africæ Australis montosis. *D. Masson.* (v. s. in Herb. Banks. et D. Aiton.)

Desc. *Frutex* erectus, ramis umbellatis, virgatis, pubescentibus. *Folia* subtriquetra, suprà canaliculata, patenti-erecta, villosiuscula, subtrilinearia. *Spica* solitaria, sessilis, uncialis, sesquiuncialis, rachi pedicellis bracteisque pubescentibus. *Bracteæ* e basi membranaceâ, lanceolatâ, subulatæ. *Involucra* brevissimè pedicellata, 2—3-flora. *Calyx* æqualis. *Stigma* convexum, papillâ elevatiore. *Squamulæ hypogynæ* quatuor subulatæ.

12. ADENANTHOS.

Labill. Nov. Holl. 1, *p.* 28.

Char. Gen. *Calyx* quadrifidus, infrà circumscissus. *Squamulæ* quatuor hypogynæ, basi persistenti calycis adnatæ.

Pistillum calyce longius. *Stigma* verticale. *Nux* ventricosa. *Involucrum* uniflorum, imbricatum, 4—8-phyllum.

Habitus. Frutices. Folia *sparsa, in diversis varia.* Flores *axillares, solitarii, rubicundi; raro terminales, subaggregati, lutescentes.*

1. A. *obovata,* foliis obovatis integerrimis glabris.

Adenanthos obovata. *Labillard. Nov. Holl.* 1, *p.* 29,* *tab.* 37.

Hab. In collibus saxosis oræ australis Novæ Hollandiæ; Lewins Land. (ubi v. v.)

152] 2. A. *cuneata,* foliis cuneatis sericeis apice dentato-crenato.

Adenanthos cuneata. *Labillard. Nov. Holl.* 1, *p.* 28,* *tab.* 36.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: prope littora. (ubi v. v.)

3. A. *sericea,* foliis filiformibus biternatis sericeis, floribus axillaribus solitariis, stylo glabro.

Adenanthos sericea. *Labillard. Nov. Holl.* 1, *p.* 29,* *tab.* 38.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in arenosis prope littora. (ubi v. v.)

4. A. *terminalis,* foliis filiformibus trifidis: laciniis lateralibus bifidis intermediâ indivisâ, floribus terminalibus solitariis ternisve, stylo villoso.

Hab. In Novæ Hollandiæ orâ australi. Flinders' Land: in depressis prope littora. (ubi v. v.)

13. SIMSIA.

Char. Gen. *Calyx* tetraphyllus, regularis, laminis reflexis. *Stamina* exserta. *Antheræ* tandem liberæ, primò cohærentes, lobis proximis vicinarum loculum constituentibus. *Stigma* dilatatum, concavum. *Nux* obconica.

HABITUS. Frutices *humiles, glabri.* Folia *alterna, filiformia, dichotoma, petioli basi dilatatâ.* Capitula *globosa, parva, terminalia, racemosa, v. paniculata, involucro brevi v. nullo.* Flosculi *flavi, glabri, unibracteati.*

I have named this genus in honour of Dr. John Sims, the respectable editor of the 'Botanical Magazine.'

*1. S. *tenuifolia,* capitulis nudis, paniculæ ramis subunifloris bracteolatis.

HAB. In Novæ Hollandiæ orâ australi: Lewins [153 Land; ad latera saxosa collium. (ubi v. v.)

*2. S. *anethifolia,* capitulis involucratis bracteolis imbricatis, paniculæ ramis multifloris: ramulis capitula subæquantibus.

HAB. In Novæ Hollandiæ orâ australi: Lewins Land; in arenosis prope littora. (ubi v. v.)

14. CONOSPERMUM.

Smith, Linn. Trans. vol. 4. *Exot. Bot. Gært. Carp.* 3, *p.* 198, *t.* 215.

CHAR. GEN. *Calyx* tubulosus, ringens, laciniâ supremâ basi fornicatâ. *Antheræ* tres, inclusæ, laterales dimidiatæ, superior biloba: primò cohærentes, lobis proximis vicinarum loculum constituentibus. *Stigma* liberum. *Nux* obconica, papposa.

HABITUS. Frutices. Folia *sparsa, integerrima, plana, rariùsve filiformia.* Spicæ *axillares v. terminales, compositæ, sensim florentes, hinc corymbosæ.* Flores *solitarii, sessiles, unibracteati, albi v. cærulescentes;* Calyce *deciduo;* Bracteâ *cucullatâ persistenti.*

OBS. Jussieu and Ventenat have referred this genus to the natural order Thymeleæ; but that it is a genuine Proteacea, as Dr. Smith has considered it, is proved by the erect embryo, the terminal style, and the æstivation of the Calyx; and is rendered evident by its affinity to Simsia, which, with the more usual appearance of this order, agrees with Conospermum in the structure of its Antheræ.

† *Calycis laciniæ acutæ, tubo vix longiores.* Conosperma vera.

1. C. *ellipticum*, foliis ovali-oblongis obtusis mucronulatis aveniis, pedunculis axillaribus.
154] Conospermum ellipticum. *Smith in Rees, Cyclop.*
HAB. In Novæ Hollandiæ orâ orientali, prope Port Jackson; in ericetis aridis. (ubi v. v.)

2. C. *taxifolium*, foliis lanceolato-linearibus acutis mucronatis tenuissimè pubescentibus verticalibus, basi tortis, pedunculis axillaribus.
Conospermum taxifolium. *Smith in Rees, Cyclop.*
HAB. In Novæ Hollandiæ orâ orientali, prope Port Jackson; in ericetis. (ubi v. v.)

3. C. *ericifolium*, foliis subulato-filiformibus imbricatis, spicis axillaribus pedunculo brevioribus.
Conospermum ericifolium. *Smith in Rees, Cyclop.*
HAB. In Novæ Hollandiæ orâ orientali, prope Port Jackson; in ericetis. (ubi v. v.)

4. C. *longifolium*, foliis oblongis linearibusve planis venosis, pedunculisque elongatis scapiformibus, corymbis decompositis, calycis limbo extùs pubescenti tubum vix æquante.
Conospermum longifolium. *Smith, Exot. Bot.* 2, *p.* 45, *t.* 82.
HAB. In Novæ Hollandiæ orâ orientali, prope Port Jackson; in ericetis collibusque saxosis. (ubi v. v.)

*5. C. *tenuifolium*, foliis lineari-filiformibus subcanaliculatis aveniis, pedunculisque elongatis scapiformibus, corymbis subsimplicibus, calycis limbo extùs pubescenti tubo longiore.
HAB. In Novæ Hollandiæ orâ orientali, prope Port Jackson; in collibus arenosis prope littora. (ubi v. v.)

*6. C. *cæruleum*, foliis oblongis lanceolatisve planis venosis, pedunculisque elongatis scapiformibus, corymbis [155 compositis, calycis limbo glaberrimo tubo longiore.

HAB. In Novæ Hollandiæ orâ australi: Lewins Land. (ubi v. v.)

†† *Calycis laciniæ caudatæ.* Chilurus.

*7. C. *teretifolium*, foliis teretibus pedunculisque elongatis, corymbis compositis.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

*8. C. *capitatum*, foliis linearibus elongatis tortilibus, capitulis sessilibus e spiculis paucifloris congestis.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus apricis graminosis. (ubi v. v.)

††† *Incertæ tribus.*

*9. C. *distichum*, foliis filiformibus subdistichis curvatis, spicis axillaribus indivisis.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in ericetis. (ubi v. v. flor. delaps.)

15. SYNAPHEA.

CHAR. GEN. *Calyx* tubulosus, ringens, laciniâ supremâ latiore. *Antheræ* tres, inclusæ, laterales dimidiatæ, inferior biloba: primò cohærentes, lobis proximis vicinarum loculum constituentibus! *Stigma* filamento superiori sterili connatum! *Nux* obovata.

HABITUS. Frutices *humiles.* Folia *sparsa, plana, pulcherrimè reticulata, circumscriptione cuneiformia, lobata, inferiora ejusdem fruticis sæpiùs indivisa: petioli basi dilatatâ semivaginanti.* Spicæ *axillares v. terminales, sim-* [156 *plices v. ramosæ.* Flores *alterni, solitarii, sessiles, uni-*

bracteati. Calyx *flavus, deciduus, quadripartibilis.* Bractea *cucullata, persistens.*

Etym. συναφη connectio, ob peculiarem cohærentiam stigmatis v. apicis styli cum filamento sterili.

*1. S. *favosa,* foliis oblongo-cuneiformibus indivisis trilobisque: lobis integris, petiolis spicisque glabris, stigmate bicorni.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

2. S. *dilatata,* foliis apice dilatatis trilobis: lobis inciso-dentatis, petiolis spicisque villosis, stigmate bicorni.

Conospermum reticulatum. *Smith in Rees, Cyclop.*

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

*3. S. *petiolaris,* foliis rameis petiolos subæquantibus tripartitis: lobis divisis planis; infimis trilobis integrisque, spicis elongatis ramosis, stigmate acuto.

Polypodium spinulosum. *Burm. Ind. p.* 233, *t.* 67, *f.* 1, vel ad hanc v. ad plantam congenerem pertinere videtur.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

*4. S. *polymorpha,* foliis rameis brevissimè petiolatis tripartitis canaliculatis: lobis subdivisis; infimis indivisis trilobisque, spicis simplicibus pedunculo longioribus, stigmate acuto.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

157] 16. FRANKLANDIA.

Char. Gen. *Calyx* hypocrateriformis, limbo quadripartito, plano, deciduo, tubo persistenti. *Antheræ* inclusæ, calyci adnatæ! *Squamæ* hypogynæ, in vaginam connatæ. *Nux* fusiformis, pedicellata, apice dilatato papposo.

Habitus. Frutex *glaber*. Folia *alterna, filiformia, dichotoma*. Spicæ *axillares, indivisæ, floribus alternis, unibracteatis, sordidè flavis*. Pollen *sphæricum*. Cotyledones *brevissimæ!*

This genus is named in honour of Sir Thomas Frankland, Baronet, to whom English botany is much indebted, and whose valuable observations and excellent figures of submarine plants it is hoped he may be induced to communicate to the public.

*Franklandia *fucifolia*.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in ericetis humidis. (ubi v. v.)

17. SYMPHIONEMA.

Char. Gen. *Calyx* regularis, tetraphyllus, basi cohærens, medio staminifer. *Filamenta* apice cohærentia! *Antheræ* distinctæ. *Glandulæ* nullæ hypogynæ. *Ovarium* dispermum. *Stigma* subtruncatum. *Nux* monosperma, cylindracea.

Habitus. Suffrutices *v.* Herbæ *glabræ, pilisve raris glandulosis*. Folia *tripartita, lobis divisis; inferiora opposita!* Spicæ *terminales et e summis alis, simplices*. Flores *alterni, sessiles, unibracteati*. Calyx *flavus, deciduus*. Bracteæ *cucullatæ, persistentes*.

*1. S. *paludosum*, laciniis foliorum subulatis semi- [158 teretibus, rachibus bracteisque glaberrimis.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in ericetis paludosis. (ubi v. v.)

*2. S. *montanum*, laciniis foliorum planis linearibus uninervibus, rachibus bracteisque pubescentibus pilis glandulosis brevissimis.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in rupibus humidis. (ubi v. v.)

18. AGASTACHYS.

Char. Gen. *Calyx* regularis, tetraphyllus, basi cohærens, medio staminifer. *Filamenta* distincta. *Glandulæ* nullæ hypogynæ. *Ovarium* sessile, monospermum, trigonum. *Stigma* unilaterale.

Habitus. Frutex *glaberrimus*. Folia *sparsa, integerrima, plana*. Spicæ *numerosæ, terminales et e summis alis, simplices*. Flores *alterni, sessiles, unibracteati*. Calyx *flavescens, deciduus*. Pistillum *staminibus brevius*. Bracteæ *cucullatæ, persistentes*.

Etym. αγασταχυς spicis abundans.

*Agastachys *odorata*.

Hab. In Insulæ Diemen plagis australioribus; prope Adventure Bay: ubi primùm a *D. Nelson* detecta, nuperiùs lecta a *D. G. Caley*. (v. s. in Herb. Banks.)

19. CENARRHENES. *Labill. Nov. Holl.* 1, *p.* 36, *t.* 50.

Char. Gen. *Calyx* tetraphyllus, regularis, foliolis suprà angustatis, deciduus. *Stamina* basi calycis inserta. *Glandulæ* 159] quatuor hypogynæ, staminiformes. *Ovarium* sessile, monospermum. *Stigma* simplex. *Drupa* baccata.

Habitus. Arbor *glabra*. Folia *alterna; plana, dentato-serrata, nitida*. Spicæ *axillares, simplices*. Flores *alterni, sessiles, unibracteati*.

Obs. Labillardière considers this genus as most nearly related to Lauri. Jussieu, however, has (in *Annales du Muséum, v.* 5, *p.* 224) stated sufficient reasons for excluding it from that order, but has not attempted to determine its affinity. I have ventured to place it in Proteaceæ, from the structure of its fruit, stamina and calyx, and the only circumstance in which it differs from them, consists in its having (according to Labillardière) four barren

stamina; but even these occupy the place of the glands or scales usually found in the order, and the resemblance they bear to stamina in this genus, may assist in explaining their nature in all: nor does their being in most cases secreting organs render this view of their origin improbable; for the function of secretion, which, as it is far from universal, must be considered as only of secondary importance in assisting impregnation, is more frequently accomplished by the modification of some of the usual parts of the flower than by the production of an additional organ.

CENARRHENES *nitida*. *Labill. Nov. Holl.* 1, *p.* 36,* *t.* 50.

HAB. In Insulæ Diemen plagis australioribus. *Labillardière.* (v. s. cum fructu sed floribus delapsis in Herb. D. Lambert.)

20. PERSOONIA. *Smith in Linn. Trans.* iv. *Gært. Carp.* 3, *p.* 218, *t.* 220. Pentadactylon. *Gært. l. c.*, *p.* 219, *t.* 220. Linkia. *Cav. Ic.* 4.

CHAR. GEN. *Calyx* tetraphyllus, regularis, foliolis medio staminiferis, suprà recurvis, deciduus. *Stamina* exserta. *Glandulæ* quatuor hypogynæ. *Ovarium* pedicellatum, [160 1-loculare, 1—2-spermum. *Stigma* obtusum. *Drupa* baccata; *Nuce* 1—2-loculari!

HABITUS. Frutices *v.* Arbusculæ, *cortice in quibusdam scarioso-lamelloso.* Folia *sparsa*, *integerrima*, *sæpiùs plana.* Pedunculi *axillares*, *solitarii*, *ebracteati*, *v. racemosi*, *unibracteati.* Flores *flavi.* Pedicellus *ovarii in quibusdam articulatus!* Cotyledones *sæpiùs plures!*

*1. P. *teretifolia*, foliis filiformibus exsulcis, pedunculis unifloris solitariis, antheris acuminatis, stylis ovario brevioribus.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

*2. P. *microcarpa*, foliis filiformibus canaliculatis, pedunculis solitariis geminis ternisve, antheris muticis, stylis ovario aliquoties longioribus, stigmate cernuo.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in ericetis paludosis. (ubi v. v.)

*3. P. *pinifolia*, foliis filiformibus laxis, spicâ foliatâ elongatâ pyramidali: foliis floralibus abbreviatis, ovario monospermo.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in ericetis et ad ripas rivulorum. (ubi v. v.)

4. P. *juniperina*, foliis subulatis strictis pungentibus, pedunculis axillaribus sparsis spicisve foliatis abbreviatis, ovariis dispermis glabris.

Persoonia juniperina. *Labill. Nov. Holl.* 1, *p.* 33,* *tab.* 45.

Hab. In Insulâ Diemen: et Novæ Hollandiæ orâ australi, prope Port Phillip: in ericetis aridis lateribusque collium. (ubi v. v.)

161] 5. P. *hirsuta*, foliis linearibus hirsutis scabris margine recurvis, pedunculis axillaribus, ovariis monospermis sericeis.

Persoonia hirsuta. *Pers. Syn.* 1, *p.* 118.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in ericetis humidis. (ubi v. v.)

*6. P. *mollis*, foliis longo-lanceolatis villosis subtùs mollissimis, calycibus barbatis, ovariis dispermis glabris.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: ad ripas arenosas fluviorum. (ubi v. v.)

7. P. *linearis*, foliis angusto-linearibus elongatis glabris, pedunculis erectis calycibusque pubescentibus, pedicello ovarii inarticulato, caule arborescenti: cortice lævi.

Persoonia linearis. *And. Repos.* 77. *Vent. Malmais.* 32. *Sims, Bot. Mag.* 760. *Pers. Syn.* 1, *p.* 118.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in campis et collibus. (ubi v. v.)

*8. P. *lucida*, foliis lanceolato-linearibus elongatis glabris, pedunculis erectis calycibusque pubescentibus, pedicello ovarii inarticulato, caule arborescenti: cortice scarioso-lamelloso.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in montosis ad ripas fluviorum. *D. Fer. Bauer.* (v. s.)

*9. P. *virgata*, foliis linearibus oblongo-linearibusve sparsis verticalibus glaberrimis margine lævibus, pedunculis erectis calycibusque glabris, caule arborescenti: cortice lævi.

HAB. In Novæ Hollandiæ orâ orientali; prope Sandy Cape: in arenosis prope littora. (ubi v. v.)

*10. P. *flexifolia*, foliis lanceolato-linearibus mucronatis [162 confertis basi tortis utrinque lævibus punctis crystallinis micantibus; marginibus scabris, calycibus glabris, caule fruticoso.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: ad latera saxosa collium. (ubi v. v.)

*11. P. *scabra*, foliis lineari-lanceolatis mucronatis utrinque scabris punctis crystallinis aliisque minutissimis opacis conspersis, calycibus pubescentibus.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

*12. P. *spathulata*, foliis lanceolato-spathulatis mucronatis concaviusculis utrinque scaberrimis punctis crystallinis.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

*13. P. *nutans*, foliis linearibus lævibus, pedunculis axillaribus recurvis calycibusque glabris.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in sylvis solo arenoso, ad radices montium. (ubi v. v.)

*14. P. *falcata*, foliis elongato-lanceolatis basi attenuatis subpetiolatis falcatis aversis coriaceis, antheris acuminatis, caule arborescenti: cortice lamelloso.

HAB. In Novæ Hollandiæ orâ orientali; Endeavour River: *Jos. Banks, Bart.*: septentrionali, Carpentaria; prope littora. (ubi v. v. cum fruct. matur. flor. delaps.)

15. P. *lanceolata*, foliis lanceolatis ellipticisve mucro-
163] natis glabris lævibus, pedunculis axillaribus unifloris, calycibus pube adpressâ subsericeis, pedicello ovarii inarticulato.

Persoonia lanceolata. *And. Repos.* 74. *Pers. Syn.* 1, *p.* 118.

β. Persoonia latifolia. *And. Repos.* 280?

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in campis ericetisque, prope littora. (ubi v. v.)

16. P. *salicina*, foliis lanceolato-oblongis inæquilateralibus aversis, racemis lateralibus pedunculisve axillaribus unifloris, calycibus glabriusculis, caule arborescenti: cortice scarioso-lamelloso.

Linkia lævis. *Cavan. Ic.* 4, *p.* 61, *t.* 389? an varietas P. lanceolatæ?

Persoonia salicina. *Pers. Syn.* 1, *p.* 118.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in campis collibus et sylvis. (ubi v. v.)

17. P. *ferruginea*, foliis ellipticis æquilateralibus venosis adversis, pedunculis axillaribus multifloris calycibusque ferrugineo-tomentosis, caule erecto.

Persoonia laurina. *Pers. Syn.* 1, *p.* 118.

Persoonia ferruginea. *Smith, Exot. Bot.* 2, *p.* 47, *t.* 83.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in campis. (ubi v. v.)

*18. P. *prostrata*, foliis ovalibus obtusis margine pubescentibus, pedunculis axillaribus uni- v. paucifloris, caule procumbente.

HAB. In Novæ Hollandiæ orâ orientali; prope Sandy

Cape: in arenosis prope littora. (ubi v. v. cum fruct. matur., flor. delaps.)

*19. P. *elliptica*, foliis ellipticis venosis, racemis [164 lateralibus, calycibus glabris, pedicello ovarii articulato.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: ad latera saxosa collium. (ubi v. v.)

*20. P. *articulata*, foliis elongato-lanceolatis æquilateralibus glabris, racemis lateralibus pedunculisve unifloris, calycibus glabriusculis, ovarii pedicelli articulo inferiore glandulas hypogynas æquante.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

*21. P. *longifolia*, foliis elongato-linearibus falcatis, racemis lateralibus pedunculisve unifloris, calycibus pube adpressâ tectis, ovarii pedicelli articulo inferiore glandulis hypogynis longiore.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

*22. P. *graminea*, foliis rameis linearibus longissimis margine recurvis, racemis secundis multifloris, calycibus glabris, caule suffruticoso abbreviato.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: ad ripas arenosas stagnorum. (ubi v. v.)

21. BRABEIUM.

Linn. Gen. Pl. 1, *n.* 85. *Mant.* 168; *ed. Schreb. n.* 1580.

Char. Gen. *Calyx* tetraphyllus, regularis. *Stamina* basi calycis inserta. *Vaginula* hypogyna. *Ovarium* sessile. *Stigma* verticale. *Drupa* exsucca, monosperma, putamine osseo.

Habitus. Arbor. Folia (Theophrasti,) *verticillata*, [165 *serrato-dentata*. Spicæ *axillares, floribus fasciculatis, ternis* *pluribusve, bracteâ communi subtensis, plerisque masculis pistillo imperfecto.*

Brabeium *stellatifolium.*

Arbor hexaphylla æthiopica, foliis circa caulem ad intervalla senis. *Pluk. Alm.* 47, *t.* 265, *f.* 3.

Amygdalus æthiopica fructu holosericeo. *Breyn. cent.* 1, *t.* 1.

Brabejum. *Hort. Cliff.* 36. *Roy. Lugd. Bat.* 400.

Brabejum stellatifolium. *Linn. Sp. Pl. ed.* i, *p.* 121; *ed.* ii, *p.* 177. *Mant. p.* 332.*

Brabyla. *Mant. p.* 137.*

Brabeium stellulifolium. *Linn. Syst. Veg.* xiii, *p.* 764. *Houtt. Nat. Hist. par.* 2, *t.* 6, *p.* 424, *tab.* 37; *ed. Germ. t.* 4, *p.* 647, *t.* 37, *f.* 1. *Lam. Encyc. Botan.* 1, *p.* 459*? *Illust. Gen. tab.* 847. *Willd. Sp. Pl.* 4, *p.* 972.

Brabeium stellatum. *Thunb. Prod.* 31.

Hab. In Africâ Australi, prope Prom. B. Spei. (v. s. in Herb. Banks., Lambert.)

22. GUEVINA.

Molin. Chil. 198. *Juss. Gen.* 424.

Quadria. *Gen. Flor. Peruv. et Chil.* 16, *tab.* 33. *Gært. Carp.* 3, *p.* 220, *tab.* 220.

Char. Gen. *Calyx* tetraphyllus, irregularis, foliolis tribus revolutis, quarto erecto. *Antheræ* apicibus concavis calycis immersæ. *Glandulæ* duæ hypogynæ, anticæ. *Ovarium* dispermum. *Stigma* obliquum. *Drupa* putamine osseo, monospermo.

Habitus. Arbor. Folia *alterna, pinnata.* Racemi *axillares, floribus geminis, pedicellatis, paribus unibracteatis.* Calyx *tomentosus, deciduus.* Drupa *parùm carnosa, nucleo amygdalino.*

166] Guevina *Avellana. Molin. Chil.* 198.*

Nebu subrotundo fraxini folio. *Feuill.* 3, *p.* 46, *t.* 33.

Quadria heterophylla. *Flor. Peruv. et Chil.* 1, *p.* 63, *t.* 99, *f.* b.

HAB. In sylvis et ad radices montium Chilensium. (v. s. in Herb. Banks. a Dombey.)

23. BELLENDENA.

CHAR. GEN. *Calyx* tetraphyllus, regularis, patens. *Stamina* hypogyna. *Glandulæ* nullæ hypogynæ. *Ovarium* dispermum. *Stigma* simplex. *Samara?* aptera, 1—2-sperma.

HABITUS. Frutex *glaberrimus.* Folia *sparsa*, *plana, apice trifida.* Spica *racemosa, terminalis; floribus sparsis, rarò geminatis.* Calyx *albus citò deciduus.* Ovarium *cum pedicello suo articulatum.* Samara *colorata margine altero sulcato.*

This genus is named in honour of JOHN BELLENDEN KER, Esq., whose botanical merits are established by an excellent Essay on *Ensatæ*, published in the 'Annals of Botany,' and by his elaborate disquisitions on the Genera of that and other monocotyledonous families, in the latter volumes of the 'Botanical Magazine.'

BELLENDENA *montana.*

HAB. In Insulâ Diemen: in summis montibus. (ubi v. v.)

24. ANADENIA.

CHAR. GEN. *Calyx* tetraphyllus, apicibus concavis staminiferis. *Antheræ* immersæ. *Glandulæ* nullæ hypogynæ. *Ovarium* dispermum. *Stigma* conicum. *Folliculus* unilocularis, abortione monospermus. *Semen* apterum.

HABITUS. Frutices. (*Grevilleis affines:*) *pube dum adsit medio affixâ.* Folia *pinnatifida v. lobata, circumscriptione cuneiformia.* Spicæ *terminales, v. laterales, floribus* [167 *geminatis, paribus unibracteatis, summis quandoque præcocioribus!*

Etym. α priv. et αδην glandula.

*1. A. *pulchella,* foliis pinnatifidis pilosiusculis: lobis cuneiformibus apice trifidis v. inciso-pinnatifidis, folliculis viscidis.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

*2. A. *trifida,* foliis cuneiformibus triplinervibus aveniis trifidis (unguicularibus) subtùs argenteis: lobis integerrimis lateralibusve 2—3-dentatis.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in sylvis solo arenoso. (ubi v. v.)

Obs. Fortè generis distincti, ob calycem irregularem, stigma paullò diversum, et folliculum ligneum bipartibilem.

*3. A. *ilicifolia,* foliis cuneiformibus (uncialibus) venosis subtùs argenteis basi attenuatis extra medium pinnatifido-incisis.

Hab. In Novæ Hollandiæ orâ australi; Flinders' Land: in arenosis prope littora. (ubi v. v. floribus inexpansis absque fructu.)

25. GREVILLEA.

Char. Gen. *Calyx* irregularis foliolis laciniisve secundis, apicibus cavis staminiferis. *Antheræ* immersæ. *Glandula* unica hypogyna, dimidiata. *Ovarium* dispermum. *Stigma* obliquum, depressum (rarò subverticale, conicum). *Folliculus* unilocularis, dispermus, loculo centrali. *Semina* marginata v. apice brevissimè alata.

Habitus. Frutices *rarò* Arbores, *pube dum adsit medio affixâ.* Folia *alterna, indivisa v. pinnatifida.* Spicæ *modò elongatæ racemosæ, modò abbreviatæ corymbosæ v. fasciculi-*168] *formes, involucro nullo, pedicellis geminatis, rarò pluribus fasciculisve unibracteatis.* Calyces *sæpissimè rubicundi, nunc flavi; in quibusdam obliquè inserti.* Folliculi *vel coriacei, ovati, stylo toto coronati; seminibus ovalibus angus-*

tissimè marginatis et apice brevissimè alatis: vel lignei, subrotundi, pseudo-bivalves basi tantum styli mucronati; seminibus undique alatis.

This extensive genus, of which a few of the least remarkable species have been already published as Embothriums by Dr. Smith, Cavanilles, and others, I have dedicated to the Right Honourable Charles Francis Greville, one of the Vice-Presidents of the Royal Society; a gentleman eminently distinguished for his acquirements in natural history, and to whom the botanists of this country are indebted for the introduction and successful cultivation of many rare and interesting plants.

Grevillea is probably the most extensive genus of Proteaceæ in New Holland, and admits of division into several very natural sections, most of which are readily distinguishable by more than one character, existing either in the parts of fructification or in habit; notwithstanding which, I have not ventured to separate them into distinct genera, as I probably should have done, had I been acquainted with fewer species; but have given to each section a proper name, a practice that may perhaps be advantageously adopted in all large genera where they are thus capable of natural subdivision. It must be unnecessary to add that proper names can in this manner be given only where the sections are perfectly natural, and not in those cases where genera have been subdivided from single characters, and those too of but little importance, as in Thunberg's division of Protea, from the form and division of the leaves; to which may be opposed the masterly [169 subdivision of the same genus previously given by Linnæus in the Mantissa, whose sections, though apparently depending on single characters, are evidently formed from a contemplation of the whole structure, as far as it was then understood; and it is remarkable that, with the exception of the first species, with whose real structure he was necessarily unacquainted, the rest are arranged, and even divided into sections, in most cases corresponding with the genera proposed in the present essay.

† Folliculi *coriacei, stylo toto stigmateque depresso coronati.* Semina *ovalia, angustissimè marginata, apiceque brevissimè alata.*

A. LYSSOSTYLIS.

Folia *omnia integerrima* (*in plerisque marginibus refractis v. replicatis pseudo*-3-*nervia*). Flores *fasciculati v. in racemo abbreviato.* Stylus *glaber.* Folliculus *ecostatus.*

1. G. *punicea,* foliis elliptico-oblongis basi subattenuatis marginibus refractis, ramulis floriferis racemoque abbreviato recurvis, pistillis uncialibus, barbâ interiore calycis oblongâ dimidium inferiorem unguium æquante.

Embothrium sericeum β. *Smith, New Holl.* 27, *t.* 9, *f.* 5, β.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in ericetis subhumidis. (ubi v. v.)

*2. G. *dubia,* foliis ellipticis marginibus refractis, ramis ramulisque tomentosis, floriferis racemoque abbreviato recurvis, pistillis unciâ brevioribus.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in saxosis subhumidis prope littora. (ubi v. v.)

Obs. Nimis affinis præcedenti.

170] 3. G. *sericea,* foliis ellipticis oblongisve obtusis mucronatis marginibus refractis, ramulis floriferis erectis, racemis abbreviatis recurvis, pistillis semuncialibus, barbâ interiori calycis dimidio inferiore unguium breviore.

Embothrium sericeum. *Smith, New Holl.* 25, *t.* 9, *f.* 1, 2, 3, 4. *Willd. Sp. Pl.* 1, *p.* 539. *And. Repos.* 100. *Sims, in Bot. Mag.* 862.

Embothrium cytisoides. *Cav. Ic.* 4, *p.* 60, *t.* 386, *f.* 2.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in saxosis prope littora marina et ad rivulorum ripas. (ubi v. v.)

4. G. *linearis,* foliis lineari-lanceolatis acutis mucronatis marginibus refractis, racemis abbreviatis erectiusculis, stylis apice glaberrimis.

Embothrium linearifolium. *Cavan. Ic.* 4, *p.* 59, *t.* 386, *f.* 1.

Embothrium lineare. *And. Repos.* 272.

Embothrium sericeum γ. *Smith, New Holl.* 27, *t.* 9, *f.* 6.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in saxosis præsertim prope littora. (ubi v. v.)

*5. G. *stricta,* foliis lanceolato-linearibus acutis mucronatis marginibus refractis costâque denticulato-scabris, stylis apice sericeis.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: ad ripas saxosas fluviorum. (ubi v. v.)

*6. G. *riparia,* foliis elongato-linearibus marginibus refractis costâque lævibus, stylis apice glaberrimis, pistillis quadrilinearibus: pedicello ovarium superante, barbâ interiori calycis densâ.

HAB. In Novæ Hollandiæ orâ orientali; prope Port [171 Jackson: ad ripas fluviorum. (ubi v. v.)

*7. G. *parviflora,* foliis subulato-linearibus marginibus refractis costâque lævibus, ramulis glabriusculis, calycibus ferrugineis barbâ interiori obsoletâ, pistillis bilinearibus: pedicello ovarium vix æquante.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in fruticetis a littore remotis. (ubi v. v.)

*8. G. *juniperina,* foliis subulatis fasciculatis divaricatis marginibus refractis, ramulis villosis teretiusculis, pistillis semuncialibus pedunculo partiali quadruplò longioribus.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in ericetis rariùs. *D. G. Caley,* & *A. Gordon.* (v. s.)

*9. G. *australis,* foliis lanceolato-subulatis unciâ brevioribus margine subrecurvis, suprà pube deciduâ conspersis subtùs sericeis, ramis ramulisque tomentosis teretibus.

HAB. In Insulæ Diemen plagis australioribus: ad fluviorum ripas. (v. v. absque flor. v. fruct.)

*10. G. *tenuifolia*, foliis subulatis margine revolutis unciâ brevioribus, fasciculis sessilibus, pistillis bilinearibus.

Hab. In Insulâ Diemen; prope Port Dalrymple: ad ripas saxosas fluviorum. (ubi v. v.)

*11. G. *pauciflora*, foliis lineari-oblongis planiusculis obtusis mucronulatis suprà lævibus subtùs subsericeis: inferioribus glabriusculis, fasciculis 2-4-floris erectis, calycibus nudiusculis pistillum subæquantibus.

Hab. In Novæ Hollandiæ orâ australi; Flinders' [172 Land: in depressis apricis prope littora. (ubi v. v.)

*12. G. *aspera*, foliis lineari-oblongis obtusis mucronulatis suprà punctato-asperis subtùs argenteis, racemis abbreviatis recurvis, stylis brevissimis, stigmate cochleariformi.

Hab. In Novæ Hollandiæ orâ australi; Flinders' Land: in ericetis aridis. (v. v. flor. delaps. fruct. matur.)

*13. G. *concinna*, foliis linearibus margine revolutis lævibus erectis, racemis recurvis secundis multifloris, ovariis lanatis, stylis glaberrimis calyce subsericeo duplò longioribus.

Obs. A reliquis sectionis facie differt.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in sterilibus prope littora marina. (ubi v. v.)

† B. PTYCHOCARPA.

Folia *omnia integerrima.* Flores *fasciculati v. in racemo abbreviato, floribus superioribus præcocioribus!* Stylus *hirsutus v. tomentosus.* Ovarium *subsessile.* Folliculus *costatus!*

*14. G. *arenaria*, foliis oblongis obtusis mucronulatis, racemis recurvis paucifloris, pistillis tomentosis.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: ad ripas arenosas fluviorum. (ubi v. v.)

*15. G. *montana*, foliis lanceolatis acutis suprà læviusculis subtùs sericeis, floribus geminatis, pedunculis glabris

calyces nudiusculos subæquantibus, pistillis hirsutis, tomento ramulorum arctè adpresso.
Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in montosis. (v. s.)

*16. G. *acuminata*, foliis lanceolatis subacuminatis mu- [173 cronatis suprà punctato-scabris subtùs cinereo-tomentosis, racemis paucifloris porrectis recurvisve, pistillis hirsutis, calycibus demùm glabriusculis, ramulis pubescentibus.
Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in montosis. (v. s.)

17. G. *cinerea*, foliis ellipticis obovatisve mucronatis suprà scabriusculis subtùs cinereo-tomentosis, racemis paucifloris recurvis, pistillis hirsutis, calycibus pedunculisque lanatis.
Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in montosis ad ripas saxosas fluviorum. (ubi v. v.)

*18. G. *mucronulata*, foliis obovatis obtusis mucronulatis suprà scabris nitentibus subtùs parùm sericeis, racemis abbreviatis, pistillis hirsutis, calycibus pilosiusculis pube adpressâ.
Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in ericetis. (ubi v. v.)

*19. G. *Baueri*, foliis oblongis obtusis mucronulatis utrinque glabris lævibus, racemis abbreviatis, pistillis hirsutis, calycibus pedunculisque glaberrimis.
Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in depressis a littore remotis. (ubi v. v.)

† C. ERIOSTYLIS.

Folia *omnia integerrima*. Flores *fasciculati, subumbellati*. Pistillum *lanatum, pedicellatum*. Folliculus *ecostatus*.

*20. G. *occidentalis*, foliis lanceolatis suprà punctatis scabris subtùs sericeis, fasciculis axillaribus terminalibusque, calycibus utrinque stylisque lanâ patulâ cinereis, stig- [174 mate mutico.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in sylvis solo sterili. (ubi v. v.)

*21. G. *sphacelata*, foliis oblongis lanceolatisve suprà punctis minutis scabriusculis subtùs sericeis, fasciculis terminalibus, calycibus extùs ferrugineo-tomentosis intùs stylisque cinereo lanatis, stigmate mutico.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in saxosis. (ubi v. v.)

*22. G. *phylicoides*, foliis lineari-lanceolatis: suprà punctato-scabris superioribus villosis; subtus pubescentibus cinereis, stigmatibus ovalibus appendice duplò longioribus.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in montibus saxosis. (ubi v. v.)

23. G. *buxifolia*, foliis ellipticis suprà punctatis scabris subtùs tomento adpresso cinereis, stigmatibus orbiculatis appendicem recurvam vix æquantibus.

Embothrium buxifolium. *Smith, New Holl.* 29, *t.* 10. *Willd. Sp. Pl.* 1, *p.* 538. *And. Repos.* 218.

Embothrium genianthum. *Cav. Ic.* 4, *p.* 60, *t.* 387.

Hab. In Novæ Hollandiæ orâ australi; prope Port Jackson: in ericetis saxosis. (ubi v. v.)

† D. PLAGIOPODA.

Folia *integerrima v. divisa.* Racemus *thyrsiformis.* Pedicellus ovarii *accretus apici obliquo pedunculi, cui utrinque foliola duo calycis unum supra alterum inserta!*

*24. G. *Goodii*, foliis integerrimis oblongis undulatis 175] venosis utrinque glabris, racemis elongatis pedunculatis, caulibus prostratis.

Hab. In Novæ Hollandiæ orâ septentrionali; Carpentaria, et Arnhem's Land: in depressis arenosis, prope littora. (ubi v. v.)

*25. G. *venusta*, foliis pinnatifidis v. trifidis passimque indivisis subtùs sericeis, racemis erectis, calycibus glaberrimis, stylis hirsutissimis.

Hab. In Novæ Hollandiæ orâ orientali; prope Cape Townsend: in umbrosis, ad radices montium. (ubi v. v.)

† E. CALOTHYRSUS. (Grevillia strictè sic dicta.)

Racemus *thyrsiformis.* Folia *pinnatifida* (*rarò passim indivisa*).

*26. G. *pungens,* foliis pinnatifidis suprà glabris subtùs argenteis: laciniis subulato-linearibus mucronatis pungentibus, racemis refractis, calycibus pistillisque glaberrimis.

Hab. In Novæ Hollandiæ orâ septentrionali; Carpentaria: prope littora. (ubi v. v.)

*27. G. *Dryandri,* foliis pinnatis subtùs sericeis: foliolis elongato-linearibus, racemis pedunculatis porrectis longissimis, calycibus insertione subobliquis pistillisque glaberrimis, caule patulo.

Hab. In Novæ Hollandiæ orâ septentrionali; Carpentaria, Arnhem's Land: prope littora. (ubi v. v.)

*28. G. *aspleniifolia,* foliis elongatis linearibus pinnatifido-incisis integerrimisque subtùs tomentosis, racemis folio ter brevioribus, calycibus pubescentibus, stylis glabris.

Hab. In Novæ Hollandiæ orâ orientali; prope Port [176
Jackson: rariùs. (v. s. in Herb. Banks.)

*29. G. *Banksii,* foliis pinnatifidis subtùs sericeis: laciniis elongato-lanceolatis, racemis erectis æqualibus, calycibus tomentosis, stylis glabris, ovariis sessilibus.

Hab. In Novæ Hollandiæ orâ orientali; Keppel Bay, Pine Port, &c.: in collibus saxosis. (ubi v. v.)

*30. G. *Chrysodendrum,* foliis pinnatifidis bipinnatifidisque: laciniis angusto-linearibus elongatis, racemis cylindraceis: floribus semiverticillatis, calycibus tomentosis basi persistenti! ovariis subsessilibus, stylis glabris.

HAB. In Novæ Hollandiæ orâ septentrionali; Carpentaria: prope littora. (ubi v. v.)

†† CYCLOPTERA.

Folliculi *lignei, subrotundi, basi styli mucronati.* Semina *undique alata.*

*31. G. *heliosperma,* foliis pinnatis subbipinnatisque glabris: pinnis oblongo-linearibus v. oblongis: inferioribus petiolatis, racemis divisis erectis, calycibus pistillisque glaberrimis.
HAB. In Novæ Hollandiæ orâ septentrionali; Carpentaria: prope littora. (ubi v. v.)

*32. G. *refracta,* foliis pinnatis passim indivisis: foliolis elongato-linearibus subtùs argenteis, racemis refractis divisis, calycibus sericeis, pistillis glaberrimis.
HAB. In Novæ Hollandiæ orâ septentrionali; Carpentaria: prope littora. (ubi v. v.)

177] *33. G. *ceratophylla,* foliis 2-3-fidis indivisisque subtùs nervosis sericeis: laciniis elongato-linearibus, folliculis glaberrimis ovalibus.
HAB. In Novæ Hollandiæ orâ septentrionali; Carpentaria: prope littora. (ubi v. v. sine flor.)

*34. G. *mimosoides,* foliis integerrimis ensiformibus planis nervosis ramisque glabris, folliculis obovatis viscidis.
HAB. In Novæ Hollandiæ orâ septentrionali; Carpentaria: prope littora. (ubi v. v. sine flor.)

*35. G. *polystachya,* foliis lineari-ensiformibus integerrimis laxis subtùs nervosis sericeis, racemis terminalibus alternis, pistillis semunciâ longioribus, stigmate obliquo concavo papillâ centrali.
HAB. In Novæ Hollandiæ orâ orientali, intra tropicum. (ubi v. v.)

*36. G. *striata,* foliis lineari-ensiformibus integerrimis strictis subtùs multinervibus sericeis, racemis terminalibus alternis, pistillis semunciâ brevioribus, stigmate verticali depresso-conico.

Hab. In Novæ Hollandiæ orâ septentrionali; Carpentaria: prope littora. (ubi v. v. sine fructu.)

*37. G. *lorea,* foliis teretibus! pendulis longissimis, stigmate truncato-pyramidato.

Hab. In Novæ Hollandiæ orâ orientali, prope littora; Shoalwater Bay. (ubi v. v. sine fructu.)

*38. G. *gibbosa,* foliis elongato-lanceolatis integerrimis pubescentulis uninervibus venosis, racemis elongatis, [178 stigmate conico, folliculis gibboso-incrassatis.

Hab. In Novæ Hollandiæ orâ orientali, intra tropicum; prope Endeavour River. *J. Banks, Bart.* (v. s.)

26. HAKEA.

Schrad. Sert. Hanov. Cavan. Ic. 6. *Labill. Nov. Holl.* 1, *p.* 30. *Pers. Syn.* 117. Conchium. *Smith, Linn. Trans.* iv, *p.* 215. *Vent. Malmais.* 110. *Gært. Carp.* 3, *p.* 216.

Char. Gen. *Calyx* tetraphyllus, irregularis, foliolis secundis. *Stamina* apicibus concavis calycis immersa. *Glandula* hypogyna unica, dimidiata (rarò biloba). *Ovarium* pedicellatum, dispermum. *Stigma* subobliquum, e basi dilatatâ conico-mucronatum. *Folliculus* unilocularis, ligneus, loculo excentrico, pseudobivalvis. *Semina* alâ apicis nucleo longiore.

Habitus. Frutices *rigidi, quandoque* Arbores *mediocres; pube dum adsit medio affixâ.* Folia *sparsa, in variis varia, nunc in eodem frutice diversiformia.* Fasciculi *v.* Racemuli, *sæpiùs axillares, in plerisque involucrati, squamis imbricatis, scariosis, caducis, rudimenta ramulorum quandoque simul includentibus, ideoque potiùs pro gemmâ habendis, sed genus, unicâ exceptâ specie, a confinibus, optimè distinguentibus, aliis notis in quibusdam vacillantibus.* Pedicelli *colorati, in* *racemosis geminati, paribus unibracteatis.* Flores *parvi, albi v. ochroleuci.* Pistillum *glaberrimum, stylo subdeciduo.* Capsula *parietibus incrassatis.* Semina *nigra, raro cinerea.*

† *Folia omnia filiformia.*

A. *Capsulæ juxta apicem ecalcaratæ.*

1. H. *pugioniformis,* foliis filiformibus indivisis glabris, calycibus sericeis hirsutisve, capsulis lanceolatis acuminatis rectis utrinque infra medium transversim cristatis.

179] *α.* Calyces sericei.

Banksia teretifolia. *Salisb. Prod.* 51.

Hakea glabra. *Schrad. Sert. Hanov.* 27, *t.* 17.

Hakea pugioniformis. *Cavan. Anal. de Hist. Natur.* 1, *p.* 213.* *Ic.* 6, *p.* 24,* *tab.* 533.

Conchium pugioniforme. *Smith, Linn. Trans.* 9, *p.* 122.*

Conchium longifolium. *Smith, Linn. Trans.* 9. *p.* 121.*

Lambertia teretifolia. *Gært. Carp.* 3, *p.* 213, *t.* 217.

β. Calyces hirsuti. Ramuli ultimi tomentosi.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in ericetis aridis, collibusque saxosis. *β* fortè distincta species. In Insulâ Diemen. (ubi v. v.)

*2. H. *rugosa,* foliis filiformibus indivisis glabris fructu parùm longioribus, capsulis obovatis curvatis refractis utrinque cristatis rugosis; acumine subulato lævi adscendenti, caule diffuso.

Hab. In Novæ Hollandiæ orâ australi; Flinders' Land: in campis sterilibus prope littora. (ubi v. v. absque flor.)

3. H. *epiglottis,* foliis filiformibus indivisis glabris fructu duplò longioribus, capsulis curvatis refractis utrinque rugosis ecristatis: mucrone adscendenti subulato carinato, seminum alâ obovatâ, caule erecto.

Hakea epiglottis. *Labill. Nov. Holl.* 1, *p.* 30, *tab.* 40.

Conchium teretifolium. *Gært. Carp.* 3, *p.* 217, *t.* 219.

Hab. In Insulâ Diemen; ad fluviorum rivulorumque ripas. (ubi v. v.)

*4. H. *nodosa,* foliis filiformibus indivisis compressiusculis, capsulis gibbosis obtusis nodosis seminumque [180 alâ obovatis, calycibus glabris, pedunculis pubescentibus.

Hab. In Novæ Hollandiæ orâ australi, prope Port Phillip; ad latera montium. (ubi v. v.)

Obs. Sequenti nimis affinis, an species distincta?

*5. H. *flexilis,* foliis filiformibus indivisis parùm compressis, capsulis ellipticis acutiusculis modicè convexis lævibus.

Hab. In Novæ Hollandiæ orâ australi, prope Port Phillip; ad latera montium. (ubi v. v.)

*6. H. *leucoptera,* foliis teretibus indivisis fructu duplò longioribus, ramis erectis virgatis subflexuosis, capsulis ovatis infrà gibbosis suprà compressis, seminibus albo-cinereis!

Hab. In Novæ Hollandiæ orâ australi; Flinders' Land: ad margines sylvarum prope radices montium. (ubi v. v. sine flor.)

*7. H. *obliqua,* foliis teretibus indivisis, ramis tomentosis, glandulâ hypogynâ adnatâ apici obliquo pedunculi, calycibus sericeis, capsulis gibbosis subnodosis.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in ericetis aridis. (ubi v. v.)

*8. H. *sulcata,* foliis filiformibus indivisis undique sulcatis divaricatis.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in ericetis aridis. (ubi v. v. sine flor. caps. immat.)

† B. *Capsulæ juxta apicem bicalcaratæ.*

*9. H. *lissosperma,* foliis filiformibus indivisis undique exsulcis glabris fructu duplò longioribus, capsulis gib- [181 bosis intùs lævibus: calcaribus brevissimis, seminis alâ obovatâ: nucleo lævi basi immarginato.

Hab. In Insulæ Diemen montibus australioribus; inter fluvia Derwent et Huon. (ubi v. v. sine flor.)

10. H. *gibbosa*, foliis filiformibus indivisis subtùs basi obsoletissimè sulcatis ramisque subpubescentibus, ramulis pedunculisque hirsutis, calycibus glabriusculis, capsulis gibbosis intùs lacunosis, seminis alâ semiellipticâ, nucleo lacunoso basi marginato.

Banksia gibbosa. *Smith in White's Voy.* 224, *t.* 22, *f.* 2. *Willd. Sp. Pl.* 1, *p.*536.

Banksia pinifolia. *Salisb. Prod.* 51.

Hakea pubescens. *Schrad. Sert. Hanov.* 27.

Hakea gibbosa. *Cavan. Anal. de Hist. Nat.* 1, *p.* 214.* *Ic.* 6, *p.* 24,* *t.* 534.

Conchium gibbosum. *Smith in Linn. Trans.* 9, *p.* 119.*

Conchium sphæroideum. *Smith in Linn. Trans.* 9, *p.* 120?*

Conchium cornutum. *Gært. Carp.* 3, *p.* 216, *t.* 219.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in ericetis. (ubi v. v.)

Obs. Calyces non penitùs glabri, sed pilis paucis longiusculis decumbentibus, sæpiùs deciduis, conspersi.

11. H. *acicularis*, foliis filiformibus indivisis glabris subtùs infra medium obsoletè sulcatis longitudine fructûs, ramulis ultimis subsericeis, pedunculis hirsutis calyces glaberrimos subæquantibus, capsulis gibbosis subrugosis intùs lacunosis.

Banksia tenuifolia. *Salisb. Prod.* 51.

Hakea sericea. *Schrad. Sert. Hanov.* 27.

182] Conchium aciculare. *Vent. Malm. t.* 111. *Smith in Linn. Trans.* 9, *p.* 121.

β. Conchium compressum. *Smith in Linn. Trans.* 9, p. 121.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in ericetis saxosis. (ubi v. v.)

*12. H. *vittata*, foliis filiformibus indivisis exsulcis glabris fructu duplò longioribus, capsulis ovatis convexiusculis æquilateralibus basi citiùs dehiscentibus intùs lacunosis, seminis alâ obovatâ, ramulis tomentosis.

HAB. In Novæ Hollandiæ orâ australi; Flinders' Land: in campis sterilibus, prope littora. (ubi v. v. sine flor.)

*13. H. *cycloptera*, foliis filiformibus indivisis fructu duplò longioribus ramulisque glaberrimis, capsulis gibbosis intùs lacunosis, seminibus utrinque alatis; alâ inferiore nucleum subæquante!

HAB. In Novæ Hollandiæ orâ australi; Flinders' Land: in campis prope littora. (ubi v. v. sine flor.)

*14. H. *suaveolens*, foliis filiformibus pinnatifidis passimque indivisis suprà sulcatis, floribus racemosis glabris: rachi tomentosâ, capsulis gibbosis.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in saxosis prope littora. (ubi v. v.)

†† *Folia pleraque filiformia, aliqua plana.*

*15. H. *microcarpa*, foliis integerrimis glabris: rameis teretibus; infimis planis, calycibus pedunculisque glaberrimis, capsulis bicalcaratis umbellatis folio multoties brevioribus.

HAB. In Insulâ Diemen; ad ripas saxosas fluviorum. (ubi v. v.)

16. H. *trifurcata*, foliis filiformibus 2-3-fidis indivisisve subtùs sulcatis: passim planis ovalibus integerrimis, calycibus hirsutis, capsulis compressis ecalcaratis. [183

Conchium trifurcatum. *Smith in Linn. Trans.* 9, *p.* 122.*

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in campis sterilibus. (ubi v. v.)

*17. H. *varia*, foliis superioribus filiformibus divisis simplicibusque: inferioribus planis pinnatifidis laciniis linearibus subulatisve, capsulis bicalcaratis.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in campis sterilibus. (ubi v. v. sine flor.)

††† *Folia omnia plana.*

A. *Folia aliqua v. omnia dentata v. incisa.*

*18. H. *attenuata*, foliis cuneatis apice dentatis pinnatifidisve: passim lanceolatis integerrimis basi attenuatis, capsulis bicalcaratis.
Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v. sine flor.)

*19. H. *linearis*, foliis lanceolato-linearibus spinuloso-paucidentatis integerrimisque aveniis impunctatis, ramulis pedunculoque communi glabris, fasciculis terminalibus axillaribusque, capsulis bicalcaratis compressiusculis.
Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in campis sterilibus. (ubi v. v.)

*20. H. *florida*, foliis angusto-lanceolatis spinuloso-dentatis, minutissimè punctatis marginibus scabriusculis, ramulis pedunculoque communi brevissimo pubescentibus, capsulis bicalcaratis convexiusculis.
184] Hab. In Novæ Hollandiæ orâ australi; Lewins Land: ad latera collium. (ubi v. v.)

*21. H. *ilicifolia*, foliis circumscriptione ovalibus opacis sinuato-dentatis spinulosis subpetiolatis, ramis tomentosis, capsulis bicalcaratis ovatis gibbosis apice compressis intùs scrobiculatis.
Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus sterilibus. (ubi v. v.)

*22. H. *nitida*, foliis lanceolatis oblongisve basi attenuatis spinuloso-paucidentatis integrisque nitidis subvenosis ramulisque glaberrimis, capsulis bicalcaratis gibbosiusculis intùs læviusculis.
Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v. absque flor.)

*23. H. *amplexicaulis*, foliis sinuato-dentatis nitidis subvenosis: basi dilatatâ cordatâ amplexicauli, caule prostrato, ramis glabris, capsulis ecalcaratis.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus sterilibus. (ubi v. v. sine flor.)

*24. H. *prostrata*, foliis angulato-dentatis apice dilatatis cuneatis: basi cordatâ amplexicauli, caule prostrato, ramis pubescentibus, capsulis ecalcaratis.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus sterilibus. (ubi v. v.)

25. H. *ceratophylla*, foliis pinnatifidis bipinnatifidisve linearibus planis, calycibus ferrugineo-tomentosis, capsulis ecalcaratis.

Conchium ceratophyllum. *Smith, Linn. Trans.* 9, [185 *p.* 124.*

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in campis collibusque. (ubi v. v.)

*26. H. *undulata*, foliis obovatis trinervibus reticulato-venosis undulatis spinoso-dentatis, capsulis ecalcaratis tumidis.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v. sine flor.)

†††B. *Folia omnia integerrima.*

27. H. *oleifolia*, foliis lanceolatis integerrimis uninervibus obsoletè venosis mucronulo spinoso: superioribus pubescentibus, ramulis tomentosis, capsulis terminalibus bicalcaratis gibbosis.

Conchium oleifolium. *Smith, Linn. Trans.* 9, *p.* 124.*

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in campis et collibus. (ubi v. v.)

28. H. *saligna*, foliis elongato-lanceolatis integerrimis uninervibus acutis apiculo sphacelato; omnibus ramulisque glaberrimis, capsulis axillaribus gibbosis: apice compresso utrinque carinato.

Embothrium salignum. *And. Repos. t.* 215.

Conchium salignum. *Smith, Linn. Trans.* 9, *p.* 124.*
Conchium salicifolium. *Gært. Carp.* 3, *p.* 217, *t.* 219.
Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in ericetis elevatioribus. (ubi v. v. sine flor.)

*29. H. *marginata,* foliis lanceolatis integerrimis marginatis uninervibus (unciâ brevioribus) mucrone spinoso: summis pubescentibus, capsulis ecalcaratis acuminatis nitidis subsessilibus.

186] Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in ericetis elevatioribus. (ubi v. v. sine flor.)

30. H. *ruscifolia,* foliis ellipticis obovatisve petiolatis integerrimis spinoso-cuspidatis suprà punctato-scabris subtùs tomentosis, ramulis hirsutis, capsulis ecalcaratis punctatis scabriusculis.

β. Hakea ruscifolia. *Labill. Nov. Holl.* 1, *p.* 30,* *t.* 39.
Hab. In Novæ Hollandiæ orâ australi; Lewins Land: ad latera collium. (ubi v. v. sine flor.)

*31. H. *cinerea,* foliis lineari-lanceolatis elongatis integerrimis trinervibus obsoletè venosis scabriusculis apiculo sphacelato, ramulis squamisque involucri tomentosis, capsulis lanceolatis acuminatis subcompressis ecalcaratis.
Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in arenosis prope littora. (ubi v. v. sine flor.)

32. H. *dactyloides,* foliis integerrimis triplinervibus venosis obovato-oblongis v. lineari-lanceolatis aversis, ramulis angulatis, pedicellis pilosis, calycibus glabris, capsulis ecalcaratis: cortice verrucoso.

α. Folia obovato-oblonga, passim lanceolata, venis anastomozantibus.

Banksia dactyloides. *Gært. Sem.* 1, *p.* 221, *t.* 47, *f.* 2. *Lam. Illust. Gen.* 1, *p.* 242, *n.* 1279, *t.* 54, *f.* 3, a Gært. mutuat.

Banksia oleæfolia. *Salisb. Prod.* 54.

Hakea dactyloides. *Cavan. Anal. de Hist. Nat.* 1, *p.* 215. *Ic.* 6, *p.* 25, *t.* 535.

Conchium dactyloides. *Vent. Malm. t.* 110. *Smith, Linn. Trans.* 9, *p.* 123.

Conchium nervosum. *Gært. Carp.* 3, *p.* 217, *t.* 219. [187

β. Folia lineari-lanceolata, venis obsoletis.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: α. in saxosis prope littora. β. ad ripas fluviorum in regione montanâ. (ubi v. v.)

33. H. *elliptica,* foliis integerrimis quinquenervibus reticulato-venosis ellipticis ovalibusve muticis, pedicellis calycibusque glabris, capsulis ecalcaratis acutis gibbosis: cortice nitido.

Conchium ellipticum. *Smith, Linn. Trans.* 9, *p.* 123.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

34. H. *clavata,* foliis integerrimis lingulatis cartilagineo-carnosis mucronatis enervibus, floribus racemosis glabris, capsulis bicalcaratis.

Hakea clavata. *Labill. Nov. Holl.* 1, *p.* 31,* *t.* 41.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis prope littora. (ubi v. v.)

*35. H. *arborescens,* foliis integerrimis lingulatis linearibusve obsoletè nervosis muticis, involucris nullis! umbellis pedunculatis, pedicellis calycibusque tomentosis, capsulis ecalcaratis.

HAB. In Novæ Hollandiæ orâ septentrionali; Carpentaria: in apricis prope littora. (ubi v. v.)

OBS. Species unica tropica et gemmis floralibus nudis.

27. LAMBERTIA.

Smith, Linn. Trans. 4, *p.* 214. *Cavan. Ic.* 6, *p.* 31.

CHAR. GEN. *Calyx* tubulosus, quadrifidus, laciniis spiraliter revolutis. *Stamina* laciniis inserta. *Squamulæ* [188 hypogynæ 4, distinctæ v. in vaginulam connatæ. *Ovarium* dispermum. *Stigma* subulatum. *Folliculus* unilocularis, coriaceo-ligneus. *Semina* marginata. *Involucrum* 1—7-florum, imbricatum, deciduum. *Receptaculum* planum, epaleatum.

HABITUS. Frutices *pulcherrimi, ramis verticillatis.* Folia *terna, sæpiùs integerrima.* Involucra *terminalia, solitaria, colorata, in plerisque septemflora, rarò uniflora.* Folliculi *subcuneati, apice hinc cuspidati, inde bicornes v. mutici, quandoque echinati.*

*1. L. *uniflora,* involucris unifloris, foliis obovatis mucronatis glabris reticulatis, folliculis hinc cuspidatis inde ecornibus.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: prope littora saxosa sinuum. (ubi v. v.)

*2. L. *inermis,* involucris septemfloris: foliolis interioribus calycis dimidio brevioribus, stylis glabris, folliculis hinc cuspidatis inde ecornibus, foliis oblanceolatis obovatisque muticis.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: ad latera saxosa collium. (ubi v. v.)

3. L. *formosa,* involucris septemfloris: foliolis interioribus calycem æquantibus, stylis pilosis, folliculis hinc cuspidatis inde bicornibus, foliis lineari-lanceolatis cuspidato-mucronatis margine revolutis.

Lambertia formosa. *Smith, Linn. Trans. tab.* 20. *And. Repos.* 69. *Cavan. Anal. de Hist. Nat.* 1, *p.* 233.* *Ic.* 6, *p.* 31,* *t.* 547.

Protea nectarina. *Wendl. Sert. Hanov. fasc.* 4, *p.* 5, *t.* 21.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in ericetis saxosis. (v. v.)

189] *4. L.? *echinata,* foliis linearibus glabris reticulatis apice dilatato-lobato! mucronato, folliculis bicornibus undique echinatis.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: ad latera saxosa collium. (ubi v. v. absque flor.)

28. XYLOMELUM.

Smith, Linn. Trans. 4, *p.* 214.

Char. Gen. *Calyx* tetraphyllus, regularis, foliolis apice revolutis. *Stamina* inserta supra medium foliolorum, iisque recurvatis exserta. *Glandulæ* quatuor hypogynæ. *Ovarium* dispermum. *Stylus* deciduus. *Stigma* verticale, clavatum, obtusum. *Folliculus* incrassato-ligneus, unilocularis, loculo excentrico. *Semina* apice alata.

Habitus. Arbor. Folia *opposita, adulta integerrima, plantæ juvenilis dentata.* Spicæ *axillares, oppositæ, amentaceæ, florum paribus unibracteatis, infimis solùm perfectis, reliquis ovario destitutis stigmateque minore abortientibus.* Folliculus *unicus tantùm maturescens, obpyriformis, tomentosus, crassissimus, intùs suturâ dehiscens, inde siccatione partibilis.*

Xylomelum *pyriforme.*

Banksia pyriformis. *Gært. Sem.* 1, *p.* 220, *t.* 47, *f.* 1, fructus. *Lam. Illust. Gen.* 1, *p.* 242, *n.* 1278, *t.* 54, *f.* 4, a Gært. mutuat. *White, Voy.* 224.

Hakea piriformis. *Cavan. Anal. de Hist. Nat.* 1, *p.* 217.* *Ic.* 6, *p.* 25,* *t.* 536.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in campis et collibus saxosis. (ubi v. v.)

29. ORITES.

Char. Gen. *Calyx* tetraphyllus, regularis, foliolis apice recurvis. *Stamina* inserta supra medium foliolorum, iisque recurvatis exserta. *Glandulæ* quatuor hypogynæ. *Ovarium* sessile, dispermum. *Stylus* strictus. *Stigma* ob- [190 tusum, verticale. *Folliculus* coriaceus, unilocularis, loculo subcentrali. *Semina* apice alata.

Habitus. Frutices. Folia *alterna, integerrima v. dentata.* Spicæ *axillares v. terminales, breves, florum paribus unibracteatis omnibus hermaphroditis.*

Etym. Ορειτης monticola. Hi Frutices enim in summis montibus crescunt.

*1. O. *diversifolia,* foliis planis lanceolatis dentatis integerrimisve subtùs tomentosiusculis, folliculis suturâ truncatâ leviterve excisâ.

Hab. In Insulæ Diemen summis montibus. (ubi v. v.)

*2. O. *revoluta,* foliis margine revolutis linearibus integerrimis subtùs incano-tomentosis, folliculis suturâ rotundatâ.

Hab. In Insulæ Diemen summis montibus. (ubi v. v. absque flor.)

30. RHOPALA.

Schreb. Gen. Pl. 144. Roupala. *Aubl. Guian.* 1, *p.* 83, *t.* 32. *Gært. Carp.* 3, *p.* 212, *t.* 217.

Char. Gen. *Calyx* tetraphyllus, regularis, foliolis apice recurvis. *Stamina* supra medium foliolorum inserta, iisque recurvatis exserta. *Squamulæ* hypogynæ quatuor, distinctæ v. connatæ. *Ovarium* dispermum. *Stylus* persistens. *Stigma* verticale, clavatum. *Folliculus* unilocularis, ligneo-coriaceus. *Semina* utrinque alata, marginata, nucleo centrali.

Habitus. Arbores. Folia *alterna, rarò verticillata, simplicia integerrima v. dentata, rariùs pinnata v. ternata, in eodem ramo.* Spicæ *axillares, quandoque terminales,* [191
racemosæ, floribus geminis paribus unibracteatis.

1. R. *montana,* foliis alternis integerrimis ovatis complicatis breviter acuminatis reticulato-venosis racemo axillari

brevioribus, pedunculis cum calycibus ovariisque ferrugineo-tomentosis.

Roupala montana. *Aublet, Guian.* 1, *p.* 83, *t.* 32. *Lam. Illust. Gen.* 1, *p.* 243, *t.* 55. *Poiret, Encyc. Botan.* 6, *p.* 316.*

Rupala montana. *Vahl, Symb.* 3, *p.* 20. *Willd. Sp. Pl.* 1, *p.* 536. *Gært. Carp.* 3, *p.* 212, *t.* 217.

Hab. In Americæ æquinoctialis Guianâ Gallicâ. *Aublet.* (v. s. in Herb. Aubl., nunc in Mus. Banks.)

*2. R. *media,* foliis alternis integerrimis ovatis planis acuminatis petiolum decurrentibus immersè venulosis racemo axillari brevioribus, pedicellis calycibusque pubescentibus, ovariis tomentosis.

Hab. In Americæ æquinoctialis Guianâ Gallicâ. *Jul. V. Rohr.* (v. s. in Herb. Banks.)

3. R. *nitida,* foliis alternis integerrimis ellipticis breviter acuminatis planis racemum axillarem subæquantibus, pedicellis cum calycibus ovariisque glabris.

Ropala nitida. *Rudge, Guian.* 1, *p.* 26, *t.* 39.

Hab. In Americæ æquinoctialis Guianâ Gallicâ. *Jos. Martin.* (v. s. in Herb. Banks. et Lambert.)

*4. R. *moluccana,* foliis alternis integerrimis ellipticis planis venulosis subreticulatis spicâ longioribus, pedicellis calycibusque glabris.

Hab. In Insulis Moluccanis. *D. Christoph. Smith.* (v. s. in Herb. Banks.)

5. R. *cochinchinensis,* foliis alternis ovato-ellipticis [192 breviter acuminatis planis extra medium subserratis racemum axillarem subæquantibus, pedicellis cum calycibus ovariisque glabris.

Helicia cochinchinensis. *Lour. Cochin.* 83,* fide speciminis ab auctore, in Herb. Banks.

Hab. In sylvis Cochinchinæ. *Loureiro, l. c.* (v. s. absque fructu.)

Desc. *Rami* glaberrimi, teretes. *Folia* petiolata, glaberrima, uninervia, 2-2½ uncias longa; quandoque integerrima. *Racemi* solitarii. *Calyx* ante expansionem clavatus, clavâ ovali tubi dimidio breviore et duplò crassiore. *Antheræ* foliolis calycis spiraliter revolutis exsertæ. *Ovarium* brevissimè pedicellatum. *Stylus* filiformis, strictus. *Stigma* clavatum, striatum, oblongum, æquilaterale. *Squamulæ* quatuor hypogynæ, breves, ad medium connatæ, persistentes (a Loureiro post lapsum calycis visæ et uti calyculus quadrifidus descriptæ).

*6. R. *serrata*, foliis alternis latè ellipticis parùm acuminatis serratis racemo axillari longioribus: basi subattenuatâ integerrimâ; paginis discoloribus, pedicellis cum calycibus ovariisque tomentosis.

HAB. In Insulis Moluccanis. *D. Christoph. Smith.* (v. s. in Herb. Banks. et Roxb.)

*7. R. *dentata*, foliis alternis ovato-lanceolatis complicatis dentatis utrinque attenuatis racemo axillari parùm brevioribus: acumine lineari, calycibus ovariisque tomentosis.

HAB. In Americæ æquinoctialis Guianâ Gallicâ. *D. Alex. Anderson.* (v. s. in Herb. Banks.)

8. R. *peruviana*, foliis alternis ovatis serratis lanuginosis subtùs ferrugineis racemo axillari brevioribus.

193] Embothrium monospermum. *Flor. Peruv. et Chil.* 1, *p.* 63,* *t.* 98.

HAB. In Peruviæ montibus frigidis; prope Panao, vicum ad Portachuelo declivia. *Flor. Peruv. l. c.*

9. R. *diversifolia*, foliis alternis simplicibus pinnatisque venosissimis subtùs pubescentibus racemo axillari brevioribus, folliculis acinaciformibus tomentosis.

Embothrium pinnatum. *Fl. Peruv. et Chil.* 1, *p.* 63,* *t.* 99.

HAB. In Peruviâ; in Muna ruderatis et versuris. *Flor. Peruv. l. c.*

10. R. *sessilifolia,* foliis quaternis subsessilibus cuneato-oblongis subacuminatis integerrimis, racemis terminalibus verticillatis umbellatisve.

Roupala sessilifolia. *Rich. in Act. Soc. Hist. Nat.* 1, *p.* 106. *Poiret, Encyc. Botan.* 6, *p.* 316.* *Willd. Sp. Pl.* 1, *p.* 537.

Ropala hameliæfolia. *Rudge, Guian.* 1, *p.* 22,* *t.* 31.

HAB. In Americæ æquinoctialis Guianâ Gallicâ. (v. s. in Herb. Banks. et Lamb.)

31. KNIGHTIA.

CHAR. GEN. *Calyx* tetraphyllus, regularis, foliolis revolutis. *Stamina* calyci extra medium inserta. *Glandulæ* hypogynæ quatuor. *Ovarium* tetraspermum, sessile. *Stigma* verticale subclavatum. *Folliculus* coriaceus, styligerus, unilocularis. *Semina* apice alata.

HABITUS. Arbor *excelsa.* Folia *sparsa, serrata.* Racemi *axillares, floribus geminatis, paribus unibracteatis.* Folliculi *oblongi, tomentosi.*

Genus proximum Rhopalæ, distinctum, Seminibus quaternis, apice solùm alatis.

This genus, which was discovered by Sir Joseph [194 Banks, is, with his approbation, named in honour of his friend Thomas Andrew Knight, Esq., the author of many valuable essays on Vegetable Physiology, published in the Philosophical Transactions.

For the figure here given I am also indebted to the liberality of the illustrious President of the Royal Society, who has enabled me to complete the account of this remarkable plant, by permitting me to copy Dr. Solander's description, which I was the more desirous to give, as it exhibits a specimen of the accuracy with which subjects of natural history were investigated in that celebrated voyage; of whose important results it is to be lamented so little is known to foreign naturalists, though in this country they have ever been open to the public, and in the most advantageous manner.

KNIGHTIA *excelsa*. Tab. 36 (II).

HAB. In Novâ Zelandiâ; prope Tolaga et Opuragi. *Josephus Banks*, Baronetus. (v. s. folliculis vacuis sed impressionibus seminum insignitis.)

DESC. *Arbor* sylvestris, magna, sæpè 80 pedalis. *Caudex* strictissimus. *Rami* erecti, teretes, glabri. *Ramuli* ultimi parùm compressi, villosiusculi. *Coma* pyramidalis. *Folia* numerosa, densè sparsa, erecta, petiolata, lanceolato-oblonga (v. oblonga), acutiuscula, profundè serrata, serraturis remotis obtusis, plana, coriacea, rigida: supernè glabra, nitida, lævia, subtùs venosa venulisque numerosissimis subreticulata, villis copiosissimis brevissimis densissimis cinerascentia: 4-5 uncias longa. *Petioli* foliis sexies breviores. *Racemi* sessiles, axillares, simplices, multiflori, ovato-oblongi, foliis duplò breviores, sæpè in ramis nudis collocati, ubi ante decessum foliorum axillares fuerunt, unde primo intuitu videntur quasi lateribus ramorum erumpentes. *Rachis* ruberrima. *Pedicelli* holosericei, 195] ruberrimi, crassiusculi, patentissimi, semunciales, bipartiti, unde biflori. *Calyx* tetraphyllus, foliola ante expansionem arctè in tubum connata, linearia, acutiuscula, sesquiuncialia, coriacea, extùs villosa holosericea, ruberrima, usque ad basin revoluta, æqualia, in medio paulò angustiora. *Glandulæ* quatuor, receptaculo inter basin foliolorum insertæ, e latâ basi acutæ, virescentes, apice rubicundæ, semilineam longæ. *Filamenta* quatuor, unguibus petalorum adnata, suprà medium per spatium lineare libera, filiformia, plana, erecta, rubicunda. *Antheræ* lineares, longitudine foliolorum, supernè parùm incurvæ, flavæ, ipso apice casso lanceolato. *Ovarium* conicum, subangulatum, villosiusculum, rubrum. *Stylus* filiformis, crassiusculus, strictus, persistens, longitudine filamentorum, rubicundus. *Stigma* cylindraceo-angulatum, incrassatum, apice attenuatum, longitudine antherarum, virescens. *Folliculus* oblongo-lanceolatus, stylo persistenti coronatus, coriaceus, crassus, durus, unilocularis, sesquiuncialis v. paulò longior, extùs sericeus. *Hactenus* SOLANDER.

OBS. Pollen triangulare, angulis per lentem pellucentioribus, flavum. *Ovarium* tetraspermum, ovulis apice alatis.

32. EMBOTHRIUM.

Embothrii species. *Forst. Gen.* 15, *t.* 8, *litt. g. et seq.*

Char. Gen. *Calyx* irregularis, hinc longitudinaliter fissus, inde quadrifidus. *Stamina* apicibus concavis calycis immersa. *Glandula* hypogyna unica, semiannularis. *Ovarium* pedicellatum, polyspermum. *Stylus* persistens. *Stigma* verticale, clavatum. *Folliculus* oblongus. *Semina* apice alata.

Habitus. Frutices *v. Arbusculæ glabræ.* Ramuli *squamis persistentibus gemmarum quandoque obsiti.* Folia *sparsa, integerrima.* Racemi *terminales, corymbosi, paribus pedicellorum unibracteatis:* Involucro *communi nullo.* [196 Flores *coccinei, glaberrimi.*

1. E. *coccineum*, foliis ovali-oblongis obtusis mucronulatis: paginis discoloribus, ramulis squamatis.

Embothrium coccineum. *Forst. Gen. p.* 16, *t.* 8, *litt. g.* —*m. Linn. Suppl.* 128. *Forst. Com. Soc. Reg. Goett.* 9, *p.* 24. *Lam. Encyc. Botan.* 2, *p.* 351.* *Illust. Gen.* 1, *p.* 244, *n.* 1284, *t.* 55, *f.* 2. *Willd. Sp. Pl.* 1, *p.* 537.

Hab. In Americâ Australi ad littora freti Magellanici, et in Terra del Fuego. (v. s. in Herb. Banks.)

Obs. Pollen ellipticum, levissimè arcuatum, extremitate utrâque pellucentiore; fovillâ majusculâ globosâ.

2. E. *lanceolatum*, foliis lanceolato-linearibus, ramis esquamatis.†

Embothrium lanceolatum. *Flor. Peruv. et Chil.* 1, *p.* 62, *t.* 96.

Hab. In Chili collibus et montibus altis, inter Conceptionis urbem et Arauci arcem. *Flor. Peruv. l. c.*

33. OREOCALLIS.

Embothrii species. *Flor. Peruv. et Chil.*

Char. Gen. *Calyx* irregularis, hinc longitudinaliter fissus, inde quadridentatus. *Stamina* apicibus concavis calycis immersa. *Glandula* nulla hypogyna. *Ovarium* pedicellatum, polyspermum. *Stigma* obliquum, orbiculato-dilatatum, concaviusculum. *Folliculus* cylindraceus. *Semina* apice alata. *Involucrum* (racemi) nullum.

HABITUS. Frutex *speciosus.* Folia *sparsa, integra, paginis discoloribus.* Racemus *thyrsoideus, terminalis, paribus pedicellorum unibracteatis.* Flores *coccinei, glaberrimi.*

ETYM. Ορος mons, et *καλος* formosus.

197] OREOCALLIS *grandiflora.*†

Embothrium grandiflorum. *Lam. Encyc. Botan.* 2, *p.* 354.* *Illust. Gen.* 1, *p.* 244, *n.* 1283. *Willd. Sp. Pl.* 1, *p.* 538.

Embothrium emarginatum. *Flor. Peruv. et Chil. p.* 62, *t.* 95.

HAB. In Peruviæ montibus; in collibus frigidis Provinciæ Tarmæ. *Flor. Peruv. l. c.*

34. TELOPEA.

Embothrii species. *Smith, Salisb.*

CHAR. GEN. *Calyx* irregularis, hinc longitudinaliter fissus, inde quadrifidus. *Stamina* apicibus concavis calycis immersa. *Glandula* hypogyna unica, subannularis. *Ovarium* polyspermum, pedicellatum. *Stylus* persistens. *Stigma* obliquum, clavatum, convexum. *Folliculus* unilocularis, cylindraceus. *Semina* apice alata, alâ hinc immarginatâ inde vasculosâ nervo obliquè recurrenti. *Involucrum* (racemi v. corymbi) imbricatum, deciduum.

HABITUS. Frutices *ramis determinatis.* Folia *sparsa, dentata v. integra.* Racemi *terminales, corymbosi, paribus pedicellorum unibracteatis.* Flores *coccinei.*

ETYM. *τηλωπος* qui e longinquo cernitur, quod de his fruticibus, floribus coccineis speciosis, valet.

In this genus, as well as in Lomatia, and perhaps in all those with an indefinite number of seeds, an extremely

thin black-brown crust is interposed between the ripe seeds, exactly corresponding with them in size and form, and which is probably the remains of a fluid matter that had separated them in the unripe state.

The most important characters distinguishing this genus from Lomatia, seem to be the single semiannular or nearly circular gland, the cohering calyx, and the vascular wing of the seed; for the Involucrum, which at first seems to [198 afford so excellent a distinction, considerably loses its importance in *Telopea truncata*, in which it almost always includes the rudiments of branches, as in Hakea. In natural affinity Telopea approaches much more nearly to Oreocallis, which differs principally in having no gland at the base of the footstalk of its ovarium, and in the want of an Involucrum: the wing of the seed seems (from the figure in the Flora Peruviana) to be in like manner vascular. Embothrium itself, which is also very near akin to Telopea, is distinguishable by its vertical stigma, oval pollen, and naked corymbi.

1. T. *speciosissima*, foliis cuneato-oblongis inciso-dentatis venosis cum ramulis involucrisque glaberrimis.

Embothrium speciosissimum. *Smith, New Holl.* 19, *t.* 7. *Sims, Bot. Mag.* 1128.

Embothrium speciosum. *Salisb. Parad.* 111.

Embothrium spathulatum. *Cav. Ic.* 4, *p.* 60, *t.* 388. *Gært. Carp.* 3, *p.* 214, *t.* 218.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: locis saxosis, præsertim subumbrosis. (ubi v. v.)

2. T. *truncata*, foliis lanceolato-oblongis integerrimis passimque paucidentatis subtùs ramulisque pubescentulis, involucris extùs tomentosis.

Embothrium truncatum. *Labill. Nov. Holl.* 1, *p.* 32, *t.* 44.

Obs. Alam seminis in hâc apice semper rotundatam in præcedenti sæpiùs truncatam observavimus.

Hab. In Insulæ Diemen montibus australioribus. (ubi v. v.)

199] 35. LOMATIA.

Embothrii species. *Smith, Cavan.*

CHAR. GEN. *Calyx* irregularis, foliolis distinctis secundis. *Stamina* apicibus concavis calycis immersa. *Glandulæ* hypogynæ tres, secundæ. *Ovarium* pedicellatum, polyspermum. *Stylus* persistens. *Stigma* obliquum, dilatatum, subrotundum, planiusculum. *Folliculus* ovali-oblongus. *Semina* apice alata; alâ marginatâ disco evasculoso.

HABITUS. Frutices. Folia *alterna, in plerisque divisa, v. dentata, rariùs integerrima, quandoque in eodem frutice varia.* Racemi *terminales, interdum axillares, elongati, laxi, nunc abbreviati, corymbosi, paribus pedicellorum unibracteatis.* Flores *ochroleuci.* Involucrum *nullum.* Seminis *nucleus farinâ sulphureâ conspersus.*

ETYM. λωμα, margo, ob seminum alam marginatam.

1. L. *silaifolia,* foliis bipinnatifidis glaberrimis: pinnulis cuneato-linearibus lanceolatisve incisis acutis mucronatis reticulato-venosis, racemis glaberrimis elongatis divisis simplicibusve.

Embothrium silaifolium. *Smith, New Holl.* 23, *t.* 8. *Willd. Sp. Pl.* 1, *p.* 537.

Embothrium herbaceum. *Cav. Ic.* 4, *p.* 60, *t.* 388.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in campis et ericetis. (ubi v. v.)

2. L. *tinctoria,* foliis pinnatifidis bipinnatifidisve (rarò indivisis) glabris: pinnulis linearibus distichis uninervibus subaveniis obtusiusculis mucronulatis, racemis elongatis glabris indivisis.

Embothrium tinctorium. *Labill. Nov. Holl.* 1, *p.* 31, *tab.* 42 *et* 43.

HAB. In Insulæ Diemen campis et collibus. (ubi v. v.)

200] 3. L. *ferruginea,* foliis bipinnatifidis tomentosis:

pinnulis ovatis lanceolatisve, racemo terminali foliis breviore.

Embothrium ferrugineum. *Cavan. Ic.* 4, *p.* 59,* *t.* 385.

Hab. In Americæ Australis "San Carlos de Chiloe in solo aquâ marinâ quandoque inundato." *Cavan. l. c.*

*4. L. *polymorpha*, foliis lineari-lanceolatis integerrimis v. dentatis pinnatifidisve subtùs cum ramulis pedicellisque tomentosis, racemis terminalibus corymbosis, calycibus pilosiusculis, pistillis glaberrimis.

α. *cinerea.* Folia lineari-lanceolata integerrima, marginibus recurvis, subtùs cinereo-tomentosa; folliculi semunciales.

β. *rufa.* Folia lanceolata v. lineari-lanceolata, incisa v. pinnatifida, passim integerrima, subtùs ferrugineo-tomentosa; folliculi subunciales.

Embothrii tinctorii var. *Labill. Nov. Holl. l. c.*

Hab. In Insulæ Diemen montibus australioribus. (ubi v. v.)

*5. L. *ilicifolia*, foliis oblongo-ovatis acutis spinuloso-dentatis reticulatis petiolisque glaberrimis, racemis terminalibus elongatis.

Hab. In Novæ Hollandiæ orâ australi; prope Port Phillip: in campis sterilibus lateribusque montium. (ubi v. v. flor. delaps.)

*6. L. *longifolia*, foliis lineari-lanceolatis elongatis glabris remotè serratis, racemis axillaribus, pedunculis calycibusque pilosiusculis, pistillis glaberrimis.

Embothrium myricoides. *Gært. Carp.* 3, *p.* 215, *t.* 218?

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: ad ripas saxosas fluviorum et rivulorum. (ubi v. v.)

7. L. *dentata*, foliis ovalibus serrato-dentatis petiolisque glaberrimis, racemis lateralibus abbreviatis, calycibus pilosis, ovario tomentoso.† [201

Embothrium dentatum. *Flor. Peruv. et Chil.* 1, *p.* 62, *t.* 94 a.

Hab. In nemoribus et sylvis regni Chilensis. *Flor. Peruv. l. c.*

8. L. *obliqua*, foliis ovatis serratis glabris, racemis axillaribus, pedicellis calycibusque pilosis, stigmate deciduo.

Embothrium obliquum. *Flor. Peruv. et Chil.* 1, *p.* 63, *t.* 97.

Embothrium hirsutum. *Lam. Encyc. Botan.* 2, p. 355. *Illust. Gen.* 1, *p.* 245, *n.* 1286.

Hab. In Conceptionis Chili et Puchacay provinciarum montibus. *Flor. Peruv. l. c.*

Obs. Ala seminis hujus et præcedentis examinanda.

36. STENOCARPUS.

Embothrii species. *Forst. Gen.*

Char. Gen. *Calyx* irregularis, foliolis distinctis, secundis. *Stamina* apicibus concavis foliolorum immersa. *Glandula* hypogyna unica, semiannularis. *Ovarium* pedicellatum, polyspermum. *Stylus* deciduus. *Stigma* obliquum, orbiculato-dilatatum, planiusculum. *Folliculus* linearis. *Semina* basi alata!

Habitus. Frutices *glaberrimi*. Folia *alterna, integerrima*. Umbellæ *axillares, v. terminales, pedunculatæ*. Flores *ochroleuci*.

Etym. στενος angustus, et καρπος fructus.

1. S. *Forsteri*, foliis oblongis obtusis enervibus.

Embothrium umbellatum. *Forst. Gen.* 16, *t.* 8, *f. a.*—*f. Forst. Aust. n.* 60. *Linn. Suppl.* 228. *Lam. Encyc. Botan.* 2, *p.* 352. *Illust. Gen.* 1, *p.* 245, *n.* 1285, *t.* 55, *f.* 1. *Willd. Sp. Pl.* 1, *p.* 538.

202] Hab. In Novâ Caledoniâ. *J. R. et G. Forster.* (v. s. sine fructu in Herb. Banks. et Lambert.)

*2. S. *salignus*, foliis elongato-lanceolatis basi trinervibus.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: ad ripas saxosas fluviorum et rivulorum. (ubi v. v.)

37. BANKSIA.

Linn. fil. Suppl.

Char. Gen. *Calyx* quadripartitus (raró quadrifidus). *Stamina* apicibus concavis laciniarum immersa. *Squamulæ* hypogynæ quatuor. *Ovarium* biloculare, loculis monospermis. *Folliculus* bilocularis, ligneus: *Dissepimento* libero, bifido. *Amentum* flosculorum paribus tribracteatis!

Habitus. Frutices *v.* Arbores, *vix excelsæ.* Rami *umbellati.* Folia *sparsa, raró verticillata, integra, serrata, v. pinnatifido-incisa, in eodem stirpe quandoque varia; in plantâ juvenili v. mutilatâ sæpè serrata, v. incisa, dum in adultâ et illæsâ integerrima.* Amenta *solitaria, terminalia v. e dichotomiis, raró lateralia, bracteolis nonnullis, brevibus, angustis subtensa, cylindracea, in quibusdam abbreviata.* Bracteæ *flosculorum persistentes, majores solitariæ; minores geminatæ, collaterales, interiores.* Amenti *fructiferi rachis utplurimum incrassata, et cum folliculorum basibus conferruminata.* Semina *nigra, apice cuneato-alata, nucleo in lacunâ respondente dissepimenti lignei semiimmerso.*

*1. B. *pulchella*, foliis acerosis integerrimis muticis (unguicularibus), calycis unguibus lanatis: laminis glabris, stigmate depresso-capitato.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land; [203 in ericetis aridis prope littora. (ubi v. v.)

*2. B. *sphærocarpa*, foliis acerosis integerrimis mucronulatis (uncialibus), calycis unguibus laminisque hirsutis, stigmate subulato, strobilis globosis, folliculis ventricosis apice compressiusculis.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in ericetis depressis. (ubi v. v.)

*3. B. *nutans*, foliis acerosis integerrimis mucronulatis, amentis nutantibus, calycibus sericeis, folliculis apice dilatatis depressis.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in ericetis aridis prope littora. (ubi v. v.)

4. B. *ericifolia*, foliis acerosis emarginato-bidentatis (unguicularibus): marginibus integerrimis, amentis elongatis, calycibus sericeis, stigmate capitato.

Banksia ericæfolia. *Linn. Suppl.* 127. *Lam. Encyc. Botan.* 1, *p.* 369. *Illust. Gen.* 1, *p.* 242, *n.* 1276. *Willd. Sp. Pl.* 1, *p.* 536. *And. Repos.* 156. *Cavan. Anal. de Hist. Nat.* 1, *p.* 221.* *Ic.* 6, *p.* 27, *t.* 538. *Pers. Synop.* 1, *p.* 117.

Banksia. *White's Voy. tab. ad p.* 225, *fig.* 1, strobilus.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in ericetis saxosis. (ubi v. v.)

5. B. *spinulosa*, foliis (adultis) acerosis (1—3-uncialibus) apice tridentatis dente intermedio longiore: marginibus spinuloso-dentatis integerrimisve, calycibus basi intùs imberbibus, stigmate subulato.

Banksia spinulosa. *Smith, New Holl.* 1, *p.* 13,* *t.* 4. 204] *Willd. Sp. Pl.* 1, *p.* 536. *Cavan. Anal. de Hist. Nat.* 1, *p.* 219.* *Ic.* 6, *p.* 26,* *t.* 537. *Pers. Synop.* 1, *p.* 17.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in ericetis aridis. (ubi v. v.)

Obs. Frutex est et sæpiùs humilis, nec Arbor decempedalis, &c. ut habet Cavanilles. l. c.

*6. B. *collina*, foliis linearibus spinuloso-dentatis denticulo terminali breviore subtùs venosis, bracteis amenti obtusis apice tomentosis, calycibus basi intùs imberbibus, caule fruticoso.

Hab. In Novæ Hollandiæ orâ orientali; in collibus apricis prope littora. Hunter's River. (ubi v. v.)

*7. B. *occidentalis*, foliis linearibus extra medium spinuloso-dentatis subtùs aveniis, bracteis amenti apice glabris, calycibus marcescentibus: unguibus basi intùs barbatis, folliculis ventricosis tomentosis: apice compressiusculo nudo, caule fruticoso, ramulis glabris.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in ericetis. (ubi v. v.)

*8. B. *littoralis*, foliis elongato-linearibus spinuloso-dentatis basi attenuatis subtùs aveniis, calycibus deciduis, folliculis compressis bracteisque strobili apice tomentosis, caule arboreo, ramulis tomentosis.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: ad littora arenosa sinuum. (ubi v. v. flor. delaps.)

9. B. *marginata*, foliis linearibus truncatis mucronulatis integerrimis v. dentatis: venulis subtùs inconspicuis, ramis ultimis hirsutis, bracteis omnibus amenti apice glabris: [205 majoribus acutis, caule fruticoso.

α. Frutex erectus, orgyalis. Amentum foliis plerumque integris longius.

Banksia marginata. *Cavan. Anal. de Hist. Nat.* 1, *p*. 227. *Ic.* 6, *p*. 29,* *t*. 544.

β. Frutex erectus, orgyalis. Folia spinuloso-dentata, planiuscula, amento quandoque longiora.

Banksia microstachya. *Cavan. Anal. de Hist. Nat.* 1, *p*. 224. *Ic.* 6, *p*. 28,* *t*. 541, exclus. syn. Linnei.

γ. Frutex humilis, diffusus. Folia spinuloso-dentata, planiuscula, cuneata, amento longiora.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in ericetis. (ubi v. v.)

*10. B. *depressa*, foliis elongato-cuneatis truncatis mucronulatis spinuloso-dentatis: subtùs obsoletè costatis venulis inconspicuis, bracteis omnibus amenti (folia vix æquantis) tomentosis obtusis, caule prostrato, ramulis ultimis hirsutis.

HAB. In Insulæ Diemen plagis australioribus; in saxosis ad radices montium. (ubi v. v.)

*11. B. *patula*, foliis cuneato-linearibus truncatis mucronulatis integris v. paucidentatis (uncialibus) subtùs reticulato-venosis, bracteis amenti apice tomentosis obtusis, calycis laminis carinâ glabrâ, caule diffuso, ramulis ultimis tomentosis.

Hab. In Novæ Hollandiæ orâ australi; Flinders' Land: inter frutices, in sterilibus elevatioribus. (ubi v. v.)

*12. B. *australis*, foliis linearibus truncatis mucronulatis margine recurvis integris subtùs reticulato-venosis, ramulis 206] ultimis tomentosis, bracteis amenti obtusis subæqualibus apice tomentosis, calycis laminis carinâ obsoletissimâ sericeâ, caule arboreo.

Hab. In Insulâ Diemen, ubique in campis et prope littora, necnon in orâ australi Novæ Hollandiæ prope Port Phillip. (ubi v. v.)

*13. B. *insularis*, foliis lineari- v. cuneato-oblongis subrotundatis cum mucronulo sparsis verticillatisve subtùs reticulato-venosis, bracteis amenti obtusis extrorsùm tomentosis, folliculis compressis apice glabris.

Hab. In Insulis Freti Bass, et in Insulâ Diemen, prope littora. (ubi v. v.)

14. B. *integrifolia*, foliis verticillatis oblongo-lanceolatis integris mucronulatis: subtùs venulis reticulantibus conspicuis, folliculis tomentosis, caule arboreo.

α. Arbor parva v. mediocris. Folia oblanceolata, sæpiùs acuta, basi attenuata. Bracteæ geminatæ obtusæ, solitariis acutis dimidio minores.

Banksia integrifolia. *Linn. Suppl.* 127. *Lam. Encyc. Botan.* 1, *p.* 369. *Illust. Gen.* 1, *p.* 242, *n.* 1275. *Willd. Sp. Pl.* 1, *p.* 535. *Cavan. Anal. de Hist. Nat.* 1, *p.* 229. *Ic.* 6. *p.* 30, *tab.* 546.

Banksia spicata. *Gært. Sem.* 1, *p.* 221, *t.* 48.

Banksia oleæfolia. *Cavan. Anal. de Hist. Nat.* 1, *p.* 228. *Ic.* 6, *p.* 30, *t.* 545.

Banksia glauca. *Cavan. Anal. de Hist. Nat.* 1, *p.* 230. *Ic.* 6, *p.* 31.*

β. Arbor magna. Folia lanceolato-oblonga, sæpiùs obtusiuscula, basi acuta. Bracteæ geminatæ obtusæ, solitariis acutiusculis haud dimidio minores.

HAB. In Novæ Hollandiæ orâ orientali; prope Port [207 Jackson: juxta littora marina. β. In orâ australi, prope Port Phillip. (v. v.)

OBS. Species polymorpha, cui nimis affines sunt *B. insularis* et *compar*.

*15. B. *compar*, foliis sparsis lingulato-oblongis emarginatis muticis dentatis integrisve: subtùs reticulato-venosis niveis, ramulis bracteisque tomentosis, calycibus sericeis, caule arboreo.

HAB. In Novæ Hollandiæ orâ orientali; prope Keppel Bay: juxta littora. (ubi v. v. absque fructu.)

OBS. Præcedenti proxima; an distincta species?

*16. B. *verticillata*, foliis verticillatis lingulato-oblongis obtusis muticis: subtùs aveniis niveis, bracteis amenti tomentosis obtusis: involucrantibus hirsutis, caule arboreo.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: prope littora. (ubi v. v.)

*17. B. *coccinea*, foliis alternis cuneato-obovatis oblongisve dentatis truncatis costatis reticulato-venosis basi transversis, bracteis subulatis calycibusque lanatis, stigmate pyramidali.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in campis prope littora. (ubi v. v.)

*18. B. *paludosa*, foliis subverticillatis cuneato-oblongis subtruncatis basi attenuatis extra medium dentato-serratis margine subrecurvis: subtùs costatis reticulato-venosis, petiolis ramulisque glabris, calycibus sericeis, caule fruticoso.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in paludosis. (ubi v. v.)

19. B. *oblongifolia*, foliis sparsis angusto-oblongis [208 truncatis dentato-serratis basi acutiusculis: subtùs costatis

reticulato-venosis, petiolis ramulisque tomentosis, bracteis majoribus amenti acuminatis, calycibus sericeis, caule fruticoso.

Banksia oblongifolia. *Cavan. Anal. de Hist. Nat.* 1, *p.* 225.* *Ic.* 6, *p.* 28,* *t.* 542.

Banksia asplenifolia. *Salisb. Prod.* 51?

Banksia salicifolia. *Cavan. Anal. de Hist. Nat.* 1, *p.* 231. *Ic.* 6, *p.* 31,*? folia enim in hâc specie quandoque integra.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in ericetis. (ubi v. v.)

20. B. *latifolia,* foliis obovato-oblongis spinuloso-serratis basi acutis: subtùs costatis reticulatis cinereo-tomentosis, calycis unguibus sericeis: laminis glabris, caule fruticoso.

Banksia robur. *Cavan. Anal. de Hist. Nat.* 1, *p.* 226.* *Ic.* 6, *p.* 29,* *t.* 543.

HAB. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in paludosis. (ubi v. v.)

OBS. Hujus speciei nomen Cavanillesii mutare coactus sum, quoniam nunquam arborescit sed frutex humilis est.

21. B. *marcescens,* foliis cuneiformibus planis sparsis truncatis extra medium dentato-serratis: basi acutiusculâ, ramis tomentosis, calycibus persistentibus folliculisque glabris.

Banksia præmorsa. *And. Repos.* 258.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: prope littora. (ubi v. v.)

OBS. Cùm folia minimè præmorsa falsum nomen mutare non hesitavi.

209] *22. B. *attenuata,* foliis elongato-linearibus truncatis basi attenuatis extra medium serratis: subtùs costatis reticulatis areolis tomentosis, bracteis apice hirsutis, calycibus glabris, folliculis tomentosis.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: prope littora. (ubi v. v.)

*23. B. *elatior,* foliis elongato-linearibus subtruncatis serratis subtùs reticulatis: adultis glabriusculis, bracteis imberbibus calycibusque tomentosis, stylo glaberrimo, stigmate ovali-clavato, caule arboreo.

Hab. In Novæ Hollandiæ orâ orientali; prope Sandy Cape: prope littora. (ubi v. v.)

24. B. *serrata,* foliis lato-linearibus elongatis truncatis serratis: subtùs reticulatis glabriusculis: basi attenuatâ, stylo imo pulvereo-pubescenti, stigmate cylindraceo sulcato: basi obliquè incrassatâ, caule arboreo.

Banksia serrata. *Linn. Suppl.* 126.* *Lam. Encyc. Botan.* 1, *p.* 369. *Illust. Gen.* 1, *p.* 242, *t.* 54, *f.* 1. *White's Voy.* 222, *cum tab.* 2 *prioribus.* *Willd. Sp. Pl.* 1, *p.* 535. *And. Repos.* 82.

Banksia conchifera. *Gært. Sem.* 1, *p.* 221, *t.* 48, *f.* 1.

Banksia serrata. *Cavan. Anal. de Hist. Nat.* 1, *p.* 222. *Ic.* 6, *p.* 27, *t.* 540. (forsan ad sequentem pertinet.)

Banksia dentata. *Wend. Hort. Herrenh. tab.* 8.? vel ad sequentem pertinens.

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in campis prope littora. (v. v.)

*25. B. *æmula,* foliis lato-linearibus elongatis truncatis profundè serratis: subtùs reticulatis glabriusculis, calycibus sericeis, stigmate capitato exsulco nitido apice (quadrangulo) styli duplò crassiore, caule fruticoso. [210

Banksia serratifolia. *Salisb. Prod.* 51.?

Banksia serrata. *White's Voy.* 222, *tab. tertia ?*

Hab. In Novæ Hollandiæ orâ orientali; prope Port Jackson: in campis arenosis ericetisque. (ubi v. v.)

Obs. B. serrata *Cavan.* et dentata *Wend.* suprà ad B. serratam citatæ, fortè ad hanc, valdè affinem, pertinent.

26. B. *dentata,* foliis cuneato-oblongis truncatis sinuato-dentatis undulatis basi acutis: subtùs costatis venulosis niveis, calycibus sericeis, folliculis tomentosis.

Banksia dentata. *Linn. Suppl.* 127. *Willd. Sp. Pl.* 1, *p.* 536.

Hab. In Novæ Hollandiæ orâ orientali, prope Endeavour River; et in septentrionali, Arnhems Land: prope littora. (ubi v. v.)

*27. B. *quercifolia,* foliis oblongo-cuneatis subtruncatis glabris serrato-incisis: incisuris mucronatis, calycis laminis aristatis! folliculis glabriusculis.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in campis prope littora. (ubi v. v.)

*28. B. *speciosa,* foliis linearibus pinnatifidis: lobis triangulari-semiovatis mucronatis subtùs niveis obsoletè nervosis, calycis laminis lanatis, stylo pubescenti, folliculis tomentosis.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in saxosis prope littora. (ubi v. v.)

29. B. *grandis,* foliis pinnatifidis: lobis triangulari-ovatis acutis planis subtùs nervosis glabriusculis, calycis laminis folliculisque glabris.

211] Banksia grandis. *Willd. Sp. Pl.* 1, *p.* 535.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

30. B. *repens,* foliis pinnatifidis: lobis sinuatis v. dentatis, caule prostrato.

Banksia repens. *Labill. Voy.* 1, *p.* 412, *t.* 23. *Nov. Holl.* 2, *p.* 118.

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in campis collibusque saxosis. (ubi v. v.)

*31. B. *ilicifolia,* foliis cuneatis inciso-serratis subtùs glabriusculis, amentis brevissimis, calycis unguibus diu cohærentibus stylum æquantibus: laminis citiùs dehiscentibus!

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in campis collibusque prope littora. (ubi v. v.)

Obs. Species tam singularis ut ferè proprii generis, transitum ad Dryandras facilem reddit.

38. DRYANDRA.

Char. Gen. *Calyx* quadripartitus v. quadrifidus. *Stamina* apicibus concavis laciniarum immersa. *Squamulæ* hypogynæ quatuor. *Ovarium* biloculare, loculis monospermis. *Folliculus* bilocularis, ligneus: *Dissepimento* libero, bifido. *Receptaculum commune* planum, floribus indeterminatim confertis, paleis angustis, rarò nullis. *Involucrum commune* imbricatum.

Habitus. Frutices *plerumque humiles.* Rami *dum adsint sparsi vel umbellati.* Folia *sparsa, pinnatifida v. incisa, plantæ juvenilis conformia.* Involucra *solitaria, terminalia, rarò lateralia sessilia, foliis confertis interioribus quandoque nanis obvallata, hemisphærica, bracteis adpressis, in quibusdam apice appendiculatis.*

Obs. Dryandra of Thunberg, first published in Flora [212 Japonica, being not generically different from Aleurites, which was previously established by Forster, I have peculiar satisfaction in giving the name of my respected friend, Mr. Dryander, to a genus so nearly related to Banksia, from which indeed it differs chiefly in Inflorescence, but in that respect so widely as to be at once distinguishable: there is also something in the habit, especially in the leaves of the greater number of species, by which, independent of the parts of fructification, the genus is pretty certainly indicated; and it is worthy of notice, that, while Banksia is generally spread over all the coasts of New Holland and of Van Diemen's Island, Dryandra has hitherto been observed only on that part of the south coast called Lewins Land, where, however, its species are nearly as numerous and abundant as those of Banksia itself.

*1. D. *floribunda,* foliis cuneiformibus inciso-serratis, involucri bracteis exterioribus glabriusculis, calycis laminis glabris, stigmate subclavato obtuso.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (v. v.)

Variat receptaculo epaleato.

*2. D. *cuneata*, foliis cuneiformibus sinuato-dentatis spinosis petiolatis, involucri bracteis omnibus sericeis, calycis laminis barbatis, stigmate subulato-filiformi acuto.

α. Folia vix sesquiunciam longa, dentibus terminalibus subæqualibus.

β. Folia biuncialia, apicis dilatati denticulo medio breviore sinubus latioribus. Forsan species distincta.

213] HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

*3. D. *armata*, foliis pinnatifidis: lobis triangularibus planis divaricatis rectis spinoso-mucronatis: terminali proximis longiore; subtùs reticulatis venulis nudis, ramis calycisque laminis glabris, stylo basi pubescenti, stigmate subulato sulcato.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

*4. D. *falcata*, foliis pinnatifidis: lobis subulato-triangularibus divaricatis falcato-recurvis spinoso-mucronatis: terminali proximis breviore; subtùs reticulatis venulis nudis, ramis pubescentibus, laminis calycis styloque longitudinaliter glabris, stigmate clavato exsulco.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

*5. D. *formosa*, foliis elongato-linearibus pinnatifidis: lobis scaleno-triangularibus muticis planis subtùs niveis, involucris tomentosis: foliolis interioribus lineari-oblongis, receptaculo paleaceo. *Tab.* 37 (*III*).

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in sterilibus prope littora. (ubi v. v.)

*6. D. *mucronulata*, foliis elongato-linearibus pinnatifidis: lobis isoscelo-triangularibus mucronulatis planis subtùs niveis, involucris tomentosis: foliolis interioribus linearibus mucronatis, receptaculo paleaceo, caule subsimplici.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: [214
in depressis saxosis. (ubi v. v.)

*7. D. *plumosa,* foliis elongato-linearibus pinnatifidis: lobis isoscelo-triangularibus mucronulatis margine subrecurvis subtùs niveis, involucri foliolis interioribus plumoso-aristatis, receptaculo epaleato.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in lateribus saxosis collium. (ubi v. v.)

*8. D. *obtusa,* foliis linearibus pinnatifidis caule decumbenti tomentoso longioribus: lobis triangularibus obtusis subtùs niveis margine incrassato-recurvis, involucri bracteis exterioribus ovatis: interioribus lineari-oblongis.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in apricis prope littora. (ubi v. v.)

9. D. *nivea,* foliis linearibus pinnatifidis caulem glabrum subæquantibus: lobis scaleno-triangularibus acutis mucronulatis subtùs niveis margine recurvis, involucri bracteis lineari-lanceolatis glabris ciliatis, calyce quadrifido, unguibus laminisque hirsutis.

α. Folia lobis adscendentibus, mucronatis, subtùs venosis. Stigma stylo parùm crassius.

Banksia nivea. *Labill. Voy.* 1, *p.* 413, *t.* 24. *Nov. Holl.* 2, *p.* 118.

β. Folia lobis divaricatis, uninervibus, subaveniis. Stigma stylo vix crassius.

HAB. In Novæ Hollandiæ orâ australi; Lewins Land: in saxosis prope littora. (ubi v. v.)

*10. D. *longifolia,* foliis linearibus pinnatifidis longissimis acutis subtùs cinereo-tomentosis: basi attenuatâ integerrimâ; lobis triangularibus adscendentibus decurrentibus margine recurvis, involucri bracteis elongato-linearibus margine barbatis extùs glabris, calycis unguibus basi lanatis suprà pubescentibus: laminis pilosiusculis, caule tomentoso. [215

Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in collibus saxosis. (ubi v. v.)

*11. D. *tenuifolia,* foliis elongato-linearibus pinnatifidis subtruncatis subtùs niveis: basi attenuatâ integerrimâ petioliformi; lobis triangularibus decurrentibus divaricatis margine recurvis, involucri bracteis tomentosis: exterioribus ovato-lanceolatis, calycis unguibus basi lanatis suprà cauleque glabris.
Hab. In Novæ Hollandiæ orâ australi; Lewins Land: in ericetis. (ubi v. v.)

*12. D. *pteridifolia,* foliis pinnatifidis caule tomentoso longioribus: lobis linearibus acutis mucronatis margine revolutis basi dilatatis, involucri bracteis tomentosis ovatis.
Hab. In Novæ Hollandiæ orâ australi; Lewins Land: ad latera saxosa collium. (ubi v. v.)

*13. D. *blechnifolia,* foliis pinnatifidis caule tomentoso longioribus: lobis linearibus obtusis mucronulatis trinervibus margine recurvis basi simplici.
Hab. In Novæ Hollandiæ orâ australi; Lewins Land: prope King George's Sound. *D. Archibald Menzies.* (v. s. absque fructificatione.)
Obs. Ad hoc genus retuli, ob summam affinitatem cum *Dryandrâ pteridifoliâ,* cujus vix varietas.

216] To render this essay as complete as I am able, I proceed to notice such plants, as either belong or have been referred to Proteaceæ, but from my imperfect acquaintance with which, or from the unsatisfactory accounts hitherto given of them, could not with certainty be referred to any of the genera described, or, if referable to any of them, I could not with confidence propose as distinct species; and shall conclude with the addition of a few synonyms to the species described, from Ray's Historia Plantarum, which

had escaped me when the paper was first read to the Society.

LEUCADENDRON *linifolium*, foliis lineari-spathulatis aversis basi attenuatis ramisque glabris, capitulo masculo sessili foliis circumvallantibus longiore, calycis tubo barbato: laminis stylisque imberbibus.

Protea linifolia. *Jacq. Hort. Schœnb.* 1, *p.* 11, *t.* 26.

OBS. There can be no doubt of the genus of this plant, or of the individual figured by Jacquin being a male. From the same figure, by which alone I am acquainted with it, it seems to be very nearly related to *Leucadendron tortum*, from which it differs in having the male heads sessile, and in the laminæ of the calyx being quite smooth.

LEUCADENDRON *fusciflorum*, foliis lineari-lanceolatis glabris junioribus rectis basi attenuatis, capitulo femineo foliis circumvallantibus breviore, calycis laminis plumoso-barbatis: tubo pilosiusculo.

Protea fusciflora. *Jacq. Hort. Schœnb.* 1, *p.* 11, *t.* 27.

This also is known to me only from Jacquin's figure, [217 from which it is unquestionably a Leucadendron, and a female plant; it can hardly however be supposed the female of the preceding species; and though I have constructed a specific character for it, I think it is not improbably a variety of *Leucadendron angustatum*.

LEUCADENDRON.

Protea linearis. *Houtt. Nat. Hist. par.* 2, *vol.* 4, *p.* 116, *t.* 19, *f.* 2, *ed. Germ. vol.* 3, *p.* 84, *t.* 19.

This is undoubtedly a Leucadendron, and probably a female plant; but from the figure alone its species cannot be determined.

LEUCADENDRON.

Protea stellaris. *Sims, Bot. Mag.* 881.

Seems to be a male plant, and apparently different from anything I have seen. From the form of the leaves and the length of those surrounding the capitulum, I am inclined to consider it as the male of Jacquin's *Protea fusciflora* already noticed.

LEUCADENDRON.

Conocarpodendron; folio tenuissimo, angustissimo, saligno; cono calyculato. *Boerh. Lugd. Bat.* 2, *p.* 203, *c. tab.*

This is probably a male plant, notwithstanding the figure of a ripe cone is given at the bottom of the plate; the separate fruits of some of Boerhaave's figures belonging decidedly to very different species. It may be the male of *Leucadendron adscendens.*

LEUCADENDRON ?

Protea odorata. *Thunb. Prod. Append.* 187.

218] There is no means of determining the genus of this plant, but it is rather more probably a Leucadendron than belonging to any other.

LEUCADENDRON ? ?

Conocarpodendron; acaulon; folio rigido, nervoso, oblongo, latiori; cono fusco; semine oblongo, in medio quasi excavato. *Boerh. Lugd. Bat.* 2, *p.* 201, *c. tab.*

I know not what to make of this. If the strobilus and nuces at the bottom of the plate really belong to it, it must be referred to Leucadendron, and will stand near L. *retusum* or L. *plumosum;* but there are some circumstances both in the figure and description which render this very doubtful. Thunberg refers it to his *Protea strobilina,* but the descriptions by no means agree.

LEUCADENDRON ?

Scolymocephalus Oleæ folio. *Sherard, in Raj. Hist.* 3, *Dendr. p.* 10.

This, according to Boerhaave, is his Conocarpodendron, &c. 2, *p.* 197, *c. tab.* which I have considered as the female of *Leucadendron squarrosum.*

LEUCADENDRON ? ?

Protea glabra. *Thunb. Diss. n.* 52.

From the very short and unsatisfactory description of Thunberg, the genus of this plant cannot be determined, or even with much probability guessed at.

ISOPOGON.

Protea divaricata. *And. Repos.* 465.

Can this be a variety of *Isopogon anemonifolius?* The yellow flowers satisfy me that it is not a species of [219 Serruria, and prevent me at the same time from referring it to *Isopogon anethifolius*, whose leaves are not unlike, but whose flowers are of a very different colour.

PROTEA.

Protea venosa. *Lam. Illust. Gen.* 1, *p.* 234, *n.* 1212. *Poiret, Encyc. Botan.* 5, *p.* 640.

Said by Poiret to resemble in most respects *Protea longiflora*; it must therefore be a genuine Protea.

PROTEA.

Scolymodendros *Africanus* ex Monte Tabulari. *Pluk. Mant.* 168, *t.* 442, *f.* 4.

This is manifestly a Protea, which it appears Plukenet had seen only in the possession of Woodward. The head, especially in the form of the bracteæ, bears a great resemblance to that of *Protea cynaroides;* but the leaves are so very different, that, unless we suppose they were drawn from memory and disproportionately reduced, it cannot be referred to this species. It is probably however one of the more common kinds, and I know not what else to suppose it may be, except *Protea grandiflora.* The figure itself has never, so far as I know, been noticed by any author.

LEUCOSPERMUM.

Scolymocephalus *Africanus*, foliis in summitate profundiùs crenatis, intercreniis majoribus, florum staminulis longis recurvis. *Raj. Hist.* 3, *Dendr. p.* 10.

This is probably a Leucospermum, and perhaps L. *ellipticum.*

220] Mimetes ?

Protea dichotoma. *Lam. Illust. Gen.* 1, *p.* 235, *n.* 1219. *Poiret, Encyc. Botan.* 5, *p.* 643.

Probably a spurious Mimetes.

Serruria *Bergii,* capitulis simplicibus solitariis subpedunculatis, bracteis cuneiformibus truncatis cum acumine villosis: inferioribus glabris, calycibus curvatis sericeis, stigmate turbinato-capitato, ramulis foliisque glabris.

Leucadendron sphærocephalum. *Berg. Cap.* 26.*

This I have no hesitation in referring to Serruria; and from the description of the accurate Bergius I am disposed to think it distinct from any that I am acquainted with. It seems most nearly related to *Serruria acrocarpa,* differing chiefly in the smoothness of its branches, and in having terminal heads.

Serruria.

Protea sphærocephala. *Houtt. Nat. Hist. par.* 2, *vol.* 4, *p.* 99, *t.* 19, *f.* 1, *ed. Germ. vol.* 3, *p.* 72, *t.* 19.

Unquestionably a Serruria, and probably referable either to S. *hirsuta* or *pedunculata.*

Serruria.

Protea villosa. *Thunb. Prod. Append.* 186.

A Serruria whose characters cannot be made out from the specific difference given by Thunberg.

Serruria.

Protea triternata. *And. Repos.* 337.

This may be intended for *S. congesta,* but I cannot with confidence refer to it as such.

Serruriæ.

221] Protea abrotanifolia minor. *And. Repos.* 536.

Protea abrotanifolia hirta. *And. Repos.* 522.

Protea abrotanifolia odorata. *And. Repos.* 545.

These are manifestly Serruriæ, but I do not venture to refer them to any of the species I have described; nor are there sufficient materials from which they may be characterized as distinct species.

Nivenia.

Protea concava. *Lam. Illust. Gen.* 1, *p.* 234, *n.* 1217. *Poiret, Encyc. Botan.* 5, *p.* 642.

A species of Nivenia, and perhaps one of those described.

Nivenia?

Protea candicans. *Thunb. Prod. Append.* 186.

Probably a Nivenia, and perhaps not different from N. *mollissima:* it may however be a species of *Serruria,* in which case it is probably S. *candicans.*

Protea *prostrata. Thunb. Prod.* 27.

I know not to what genus this may belong; but from the species near which Thunberg has placed it, it may be supposed to be either a *Protea* or a *Leucadendron:* if the latter, it is probably not very different from L. *retusum.*

Hakea.

Conchium drupaceum. *Gært. Carp.* 23, *p.* 217, *t.* 219.

I cannot refer this fruit to any of the species I have described.

Embothrium *chaparro. Humb. Æquin. Bot.*

Of this I know nothing but the name, which occurs in Humboldt's Chart of Æquinoctial Botany, and is placed there at the height of about 1600 feet.

Embothrium *strobilinum. Labill. Nov. Holl.* 2, [222
p. 116, *t.* 265.

The seeds of this remarkable plant, which I am acquainted with only from Labillardiere's figure and description, being unknown, and the internal structure of its ovarium not having been examined, its genus cannot be determined. Its regular and deeply divided calyx, the four glands at the base of the ovarium, and its vertical equilateral stigma, point out its near affinity to Knightia, from which it differs in the style being deciduous, and perhaps also in the number and form of its seeds. If these are but two in number, it would be still more nearly related to Orites; but something in its whole appearance, and especially its uncommonly large bracteæ, indicates its being a distinct genus.

According to Labillardiere, it is a native both of New Caledonia and the south-west coast of New Holland: but as I am acquainted with no plant of the order, which has so wide a range as this, and as it may be presumed the specimens from New Holland were very imperfect, otherwise so remarkable a plant would surely have found a place in the body of his work, I may be permitted to question the accuracy of the statement. I confess however that I know no plant of Lewins Land with which this could be confounded.

Roupala *pinnata.* *Lam. Illust. Gen.* 1, *p.* 243, *n.* 1282. *Poiret, Encyc. Botan.* 6, *p.* 317. *Rudge, Pl. Guian.* 25, *t.* 38.

There can be little doubt of this plant constituting a distinct genus; but its fruit being entirely unknown, it is better to place it among those which require a further examination. It was referred to Rhopala at a time when that genus was not at all understood. In its compound 223] leaves, its irregular calyx, and even in some degree in the glands subtending the ovarium, it seems to approach more nearly to Gevuina; and I am therefore inclined to think its fruit will be found to be a drupa, and not a folliculus as that of Rhopala. The whole plant however is so remarkable, that I here add a description taken from an excellent specimen, in Mr. Lambert's Herbarium, collected by the unfortunate Martin in Guiana, where it seems to have been first found by Richard.

Frutex? v. Arbor. *Ramuli* teretes, tomento minuto cinerascentes. *Folia* alterna, abruptè pinnata, 3-4-jugâ. *Foliola* opposita, petiolata, latè ovata, obtusa quandoque acutiuscula, integerrima, glaberrima, super nitida, subter ferè opaca, venulis anastomozantibus parùm emersis reticulata: dum 3½ uncias longa 2 uncias lata. *Petioli* partiales

semunciales, semiteretes, cum rachi teretiusculâ articulati. *Spica* terminalis, pedunculata, erecta, folio brevior, pedunculo longior, racemosa: *Pedunculo* rachique teretibus, pube brevissimâ cinereo-ferrugineis (in sicco). *Pedicelli* geminati, teretes, calyce breviores. *Calyx* tetraphyllus. *Foliola* ante expansionem in tubum curvatum cylindraceum clausum utrinque ampliatum cohærentia, mox ad basin distincta, decidua, linearia, extùs pube tenuissimâ arctè appressâ (in sicco) cinereo-ferrugineâ; intùs glabra: *Unguibus* linearibus, basi dilatatis: *Laminis* ovatis, acutis, concavis. *Stamina* 4. *Filamenta* brevissima, basi laminarum imposita. *Antherarum* lobi (connectivo) adnati, distincti, basi parùm divergentes, longitudinaliter dehiscentes. *Pollen* flavum. *Ovarium* brevè pedicellatum, parvum, uniloculare, dispermum, ovulis collateralibus: *Pedicello* basi cincto *Squamâ* latâ, glabrâ, adnatâ, (in sicco) corrugatâ, posticè subdeficiente, intersticiâ angustissimâ. *Stylus* cylindraceus, crassiusculus, glaber, longitudine unguium calycis. *Stigma* obliquum, convexum, stylo crassius, papillâ centrali.

Obs. Singularis, Foliis verè compositis, petiolellis cum [22 rachi articulatis; et Squamâ hypogynâ pedicello ovarii adnatâ, nec ipso receptaculo connexâ.

Oritina *acicularis.* *Append. Flor. Nov. Holl. ined.*

This is a perfectly smooth erect shrub; with alternate cylindrical leaves, furrowed on the upper surface and terminated by a pungent mucro. I observed it only on the summit of the Table Mountain, at the southern extremity of Van Diemen's Island. The perfect flowers I have not seen, but have examined the ovarium so soon after fœcundation, that I have no doubt of its containing originally only two ovula; and as its base is surrounded by four glands, the calyx is probably regular. Hence its near affinity to Orites, with which it also agrees in inflorescence and apparently in stigma. The fruit is a smooth compressed coriaceous follicule, containing two seeds, which are winged at both ends; on which account I have not absolutely referred it to Orites, but, until its flowers are discovered, have given it a temporary name, indicating its affinity to that genus.

BANKSIA *musculiformis*. *Gært. Sem.* 1, *p.* 221. *Lam. Illust. Gen.* 1, *p.* 242, *n.* 1280.

Fructus musculiformis. *Rumph. Amb.* 2, *p.* 184, *t.* 60.

Gærtner has taken up this plant entirely from Rumpf's figure, and referred it to Banksia on account of its fruit containing according to that author two winged seeds. But from Rumpf's description, it appears that the whole plant is lactescent; hence it probably does not belong to this family, but rather to Apocineæ, as Burmannus has already conjectured.

CYLINDRIA. *Lour. Cochin. ed. Willd.* 1, *p.* 86.

225] Both Willdenow and Ventenat have considered this genus as belonging to Proteaceæ, with whose structure indeed the description of Loureiro in most respects well agrees. Mr. Konig, however, (Ann. of Bot. 1, p. 392,) assures us, on the authority of original specimens, that it is scarcely different from Olea, though Loureiro has characterized it as having four bilocular antheræ, included in the concave apices of the segments of the corolla; two circumstances altogether incompatible with Oleinæ, and which render it not improbable that the specimen sent to Sir Joseph Banks by the author was very different from that which he described.

LEUCOSPERMUM *Conocarpum*.

Scolymocephalus *Africanus*, latifolius, lanuginosus, foliis in summitate crenatis, comâ sericeâ. *Raj. Hist.* 3, *Dend. p.* 9.

MIMETES *Hartogii*.

Scolymocephalus *Africanus* lanuginosus humilis, foliis in summo tridentatis, flore dilutè purpureo, carinulâ albulâ *Oldenlandii*. *Raj. Hist.* 3, *Dend. p.* 10, fide characteris et descriptionis.

MIMETES *cucullatus*. (*Raj. Hist.* 3, *Dend. p.* 10, *n.* 10.)

MIMETES *hirtus*.

Scolymocephalos *Africanus*, foliis brevioribus acuminatis, floribus rubentibus, summis surculis foliis intermistis. *Raj. Hist.* 3, *Dend. p.* 10.

Besides the Proteaceæ described or noticed in this [226 paper, I am acquainted with several very beautiful species, chiefly of Grevillea and Persoonia, discovered in New Holland by Mr. *George Caley*, a most assiduous and accurate botanist, who, under the patronage of Sir JOSEPH BANKS, has for upwards of eight years been engaged in examining the plants of New South Wales, and whose numerous discoveries will, it is hoped, be soon given to the public, either by himself, or in such a manner as to obtain for him that reputation among botanists to which he is well entitled.

TABULARUM EXPLICATIO.

Tab. 36 (II). Knightia excelsa.

FIG.
1. Flos expansus, parùm auctus.
2. Idem longitudinaliter apertus, magnitudine naturali.
3. Ejusdem basis cum glandulis hypogynis.
4. Pistillum auctum, ovario longitudinaliter secto ovulis quatuor.
5. Ovulorum insertiones et relativas positiones ostendens.
6. Ovulum paulò magìs auctum.
7. Pollen plurimùm auctum.

Tab. 37 (III). Dryandra formosa.

1. Ramus magnitudine naturali.
2. Flos magnitudine naturali.
3. Idem auctus.
4. Receptaculum commune magnitudine naturali et auctum.
5. Idem verticaliter sectum.
6. Paleæ receptaculi.
7. Folliculus.
8. Dissepimentum cum seminibus.
9. Semina.
10. Dissepimentum.
11. Pollen ad lentem auctum.

ON THE

ASCLEPIADEÆ,

A NATURAL ORDER OF PLANTS SEPARATED FROM THE APOCINEÆ OF JUSSIEU.

BY

ROBERT BROWN, LIB. LINN. SOC.

(READ 4TH NOV., 1809.)

[*Extracted from the 'Memoirs of the Wernerian Natural History Society,' Vol. I, pp.* 12—78.] 1809

EDINBURGH.

1811.

ON THE [12

ASCLEPIADEÆ.

The vast additions to the number of species which botany is constantly receiving, while they make a natural arrangement absolutely necessary to the general botanist, render it at the same time proportionally difficult. For though there are still many tribes of plants easily distinguishable even by a superficial observer, yet there are others, that hitherto have been thought abundantly distinct, which can no longer be circumscribed by means of characters taken from their organs of reproduction. This is perhaps now the case with the RUBIACEÆ and APOCINEÆ of Jussieu. It is true, that to an experienced observer, it may still be practicable to refer the greater part, perhaps the whole, of these plants to their proper places in a natural series; [13 but it is, I apprehend, no longer so, to distinguish the two orders by definitions derived from the usual source. Such at least is the opinion I have been led to form from all that I have seen published respecting them, as well as from what I have lately had an opportunity of observing in New Holland.

As, however, both these families are already too extensive, it becomes expedient rather to attempt their subdivision into smaller groups, which may possibly admit of more accurate limitation, than to unite them into one vast order, the distinguishing characters of which, could they be obtained, must probably be extremely vague, and clogged with numerous exceptions. Such a subdivision, it seems to me, may be easily made of the Apocineæ, by employing a character at once obvious and important, and which while it preserves the natural series unbroken, has the additional advantage of dividing the order into two nearly equal parts. To one of these which includes the genus Apocynum, the name of Apocineæ will of course remain.

The consideration of the other, which from one of its most remarkable genera I propose naming ASCLEPIADEÆ, forms the chief subject of the following essay; but the more completely to illustrate it, I have subjoined new, and I trust amended characters of the genera of the most nearly related section of the Apocineæ strictly so called. The
14] singular structure of the stamina in the Asclepiadeæ has attracted the attention of botanists since the days of Tournefort: it is therefore not a little remarkable, that two opposite opinions should still be held even respecting the origin of these parts, and that between these opinions botanists should be almost equally divided.

In a paper which was some time ago read to the Linnean Society of London,[1] I had occasion, in inculcating the necessity of examining the parts of the flower before expansion, to advert to this tribe of plants; and I there entered at some length, both into the opinions generally received respecting their male organs, and also into that which I had deduced from an examination of these parts before the opening of the corolla: and being unwilling to repeat now, what I then stated, I shall content myself with referring to the figures and descriptions published by Jacquin in the first volume of his "Miscellanea Austriaca," which give a correct idea of the state of the organs after expansion; and only add the observations I have made on one species of the family, the *Asclepias Syriaca*, in the earlier stages of the flower.

The flower-bud of this plant I first examined, while the unexpanded corolla was yet green and considerably shorter than the calyx. At this period, the gland-like bodies which afterwards occupy the angles of the stigma were absolutely invisible; the furrows of its angles were extremely slight, and, like the body of the stigma, green; the antheræ, however, were distinctly formed, easily separable [15 from the stigma, and their cells, which were absolutely shut, were filled with a turbid fluid, the parts of which did not so cohere as to separate in a mass; of the cuculli, which in the expanded flower are so remarkable, and constitute the essential character of the genus, there was no appearance.

---

[1] [*Ante*, pp. 6—8.]

In the next stage submitted to examination, where the corolla nearly equalled the calyx in length, the gland-like bodies of the stigma were become visible, and consisted of two nearly filiform, light brown, parallel, contiguous and membranaceous substances, secreted by the sides of the furrow, which was now somewhat deeper: instead of the filiform processes, a gelatinous matter occupied an obliquely descending depression proceeding from towards the base of each side of the angular furrow.

In a somewhat more advanced stage, the membranes which afterwards become the glands of the stigma were found to be linear, closely approximated, and to adhere at their upper extremity. At the same time the gelatinous substance in the oblique depression had acquired a nearly membranaceous texture and a light brown colour, and on separating the gland from its furrow, which was then practicable, this membrane followed it. At this period, too, the contents of each cell of the anthera had acquired a certain degree of solidity, a determinate form, and were separable from the cell in one mass; the cuculli were [16 also observable, but still very small and green, nearly scutelliform, having a central papilla, the rudiment of the future horn-like process. Immediately previous to the bursting of the cells of the antheræ, which takes place a little before the expansion of the corolla, the cuculli are completely formed, and between each, a pair of minute light green fleshy teeth are observable, the single teeth of each pair being divided from each other by the descending alæ of the antheræ. The glands of the stigma have acquired a form between elliptical and rhomboidal, a cartilaginous texture, and a brownish-black colour; they are easily separable from the secreting furrow, and on their

under surface there is no appearance of a suture, or any indication of their having originally consisted of two distinct parts: along with them separate also the descending processes, which are compressed, membranous, and light brown; their extremity, which is still unconnected, being more gelatinous but not perceptibly thickened. The pollen has acquired the yellow colour and the degree of consistence which it afterwards retains. On the bursting of the cells, the gelatinous extremity of each descending process becomes firmly united with the upper attenuated end of the corresponding mass of pollen. The parts are then in that condition in which they have been commonly examined, and are exhibited in the figures of Jacquin, who having seen
17] them only in this state, naturally considered these plants as truly gynandrous, regarding the masses of pollen as the antheræ, originating in the glands of the stigma, and merely immersed in the open cells of the genuine antheræ, which he calls antheriferous sacs; an opinion in which he has been followed by Rottboell, Koellreuter, Cavanilles, Smith, and Desfontaines. The conclusion to be drawn from the observations now detailed is sufficiently obvious; but it is necessary to remark, that these observations do not entirely apply to all the plants which I have referred to the Asclepiadeæ, some of them, especially Periploca, having a granular pollen, applied in a very different manner to the glands of the stigma: they all, however, agree in having pollen coalescing into masses, which are fixed or applied to processes of the stigma, in a determinate manner; and this is, in fact, the essential character of the order. Dr. Smith, in the second edition of his valuable "Introduction to Botany," has noticed my opinion on this subject; but, probably from an indistinctness in the communication, which took place in conversation, has stated it in a manner somewhat different from what I intended to convey to him: for, according to his statement, the pollen is *projected* on the stigma. The term projection, however, seems to imply some degree of impetus, and at the same time presents the idea of something indeterminate respecting the part to which the body
18] so projected may be applied. But nothing can be more

constant than the manner in which the pollen is attached to the processes of the stigma in each species; and as considerable differences in this respect take place in various species, I have with advantage employed these in the new generic divisions of the order which I have attempted to establish, and to which I now proceed.

As I have everywhere mentioned the sources from which my knowledge both of genera and species is derived, it becomes unnecessary particularly to notice here the extent of my obligations to the unrivalled Herbarium of Sir Joseph Banks, who, with his accustomed liberality, has permitted me to examine, and, where necessary, to dissect such specimens as seemed to have any peculiarity of structure, and has thus enabled me to found my genera on a more satisfactory induction than I could have done in any other part of the world.

ASCLEPIADEÆ.

I. POLLINIS MASSÆ (10-20) CEREACEÆ, LÆVES, nec in granulis separandæ.

A CORPUSCULA STIGMATIS (5) SULCO LONGITUDINALI BIPARTIBILIA, juxta basin, v. latere utrinque exserentia processum, Massam Pollinis unicam, affigentem.

a. POLLINIS MASSÆ ERECTÆ v. conniventes, stigmati incumbentes: basi, v. infra medium lateris, affixæ.

† Antheræ apice simplices, nec membranâ terminatæ.

* Columna fructificationis tubo corollæ inclusa. Tubus stamineus extus appendiculatus.

1. Corollæ tubus e basi ventricosâ cylindraceus: limbi 5partiti laciniæ ligulares, conniventes. Corona staminea 2plex, interioris foliola lobis exterioris opposita .... CEROPEGIA.
2. Corolla campanulata, limbo 10fido, laciniis accessoriis nanis. Corona staminea 2plex; *exterior* 5fida laciniis bifidis; *interior* 5phylla, foliolis laciniis exterioris oppositis......... HUERNIA.
3. Corolla campanulata, 5fida. Corona staminea simplex, 5phylla, foliolis dorso dentato-cristatis .... PIARANTHUS.

** Columna fructificationis exserta v. semi-exserta.

1. Corona staminea duplex: (utriusque figura varia); interior (cujus foliola antheris opposita) quandoque obsoleta. Massæ pollinis altero margine cartilagineo-pellucido .... STAPELIA.
2. Corona staminea simplex, 10phylla; foliolis 5, antheris oppositis, indivisis, obtusis, 5 reliquis bipartitis, acutis. Massæ pollinis utroque margine opaco .... CARALLUMA.
3. Corona staminea simplex, 5loba, lobis antheris alternantibus! denticulis nanis quandoque interjectis. Massæ pollinis medio affixæ stigmati incumbentes .... MICROSTEMMA.
4. Corona staminea nulla: Corollæ subrotatæ faux squamis 5 coronata. Massæ pollinis basi affixæ, apice coarctato pellucido .... LEPTADENIA.

†† Antheræ membranâ terminatæ.

‡ Tubus stamineus extus appendiculatus.

* Corona staminea (simplex, 5phylla), foliolis *depressis*, carnosis. Corolla rotata.

1. Coronæ foliola angulo interiori producto in dentem antheræ incumbentem .... HOYA.
2. Coronæ foliola angulo interiori simplici edentulo .... TYLOPHORA.

** Corona staminea (5phylla), foliolis *compressis*.

1. Coronæ foliola apice indivisa, intus edentula .... MARSDENIA.
2. Coronæ foliola apice indivisa, intus lacinulâ aucta .... PERGULARIA.
3. Coronæ foliola bifida, laciniis apice recurvis .... DISCHIDIA.

‡‡ Tubus stamineus extus inappendiculatus.

1. Semina comosa. Folliculi graciles, læves. Corolla urceolata, fauce coronatâ, nunc edentulâ .... GYMNEMA.
2. Semina calva, marginata. Folliculi ventricosi, carnosi. Corolla subrotata, fauce edentulâ SARCOLOBUS.

b. POLLINIS MASSÆ TRANSVERSÆ, extremitate exteriore (respectu loculi transversim dehiscentis) affixæ, stigmate occultatæ. Corona staminea 1phylla, lobata.

1. Semina comosa. Folliculi sæpius costati v. muricati. (Caulis volubilis) .... GONOLOBUS.
2. Semina calva, crenata. (Caulis erectus) .... MATELEA.

c. POLLINIS MASSÆ PENDULÆ, apice v. supra medium lateris affixæ. Antheræ membranâ terminatæ.

† Tubus stamineus appendiculatus.

‡ Corona staminea simplex, 5phylla, foliolis antheris oppositis, lacinulis 5 nanis in eadem serie quandoque interjectis.

* Corolla 5partita reflexa. Coronæ foliola subcucullata, apice tubi filamentorum imposita.

1. Coronæ foliola cucullata, e fundo exserentia lacinulam corniformem. Folliculi graciles, læves .... ASCLEPIAS.
2. Coronæ foliola subcucullata, utrinque unidentata, absque lacinulâ interiori. Folliculi inflati, ramentacei .... GOMPHOCARPUS.

I. POLLINIS MASSÆ (10-20) CEREACEÆ, LÆVES, &c.—(*contin.*).

A. CORPUSCULA STIGMATIS (5) SULCO LONGITUDINALI BIPARTIBILIA, &c.—(*contin.*).

** Corolla rotata, non reflexa. Coronæ foliola acuta v. acuminata, intus edentula .... Oxystelma.

*** Corollæ subcampanulatæ tubus ventricosus.

α. Columna fructificationis exserta. Massæ pollinis compressæ.

1. Coronæ foliola carnosa, obtusa, simplicia, denticulis 5 alternantibus nanis. Folliculi ventricosi, ramentacei .... Xysmalobium.
2. Coronæ foliola longitudinaliter adnata, aversa, basi recurva. Folliculi ventricosi, læves .... Calotropis.
3. Coronæ foliola carnosa, obtusa, soluta. Massæ pollinis curvaturæ processuum dein adscendentium affixæ. Corollæ laciniæ ligulares .... Oxypetalum.

β. Columna fructificationis inclusa. Massæ pollinis ventricosæ.

1. Corolla campanulata. Coronæ foliola e basi dilatatâ subulata, intus simplicia. Massæ pollinis apice affixæ. Stigma muticum .... Kanahia.
2. Corolla urceolata. Coronæ foliola lacinulâ interiori parallelâ aucta. Massæ pollinis infra apicem affixa. Stigma rostratum .... Diplolepis.

‡‡ Corona staminea simplex, monophylla, tubo intus quandoque laciniis carinisve aucto. Corolla subrotata.

1. Corona annularis integerrima. Massæ pollinis compressæ .... Holostemma.
2. Corona ore 5-20fido, dum 5fida lobis antheris oppositis .... Cynanchum.
3. Corona 5partita, lobis antheris alternis .... Metaplexis.

‡‡‡ Corona staminea composita, seriebus 2 v. 3 insertione distinctis.

* Corona duplex, *exterior* 1 v. 5phylla, *interior* 5phylla. Faux corollæ esquamata.

1. Corona *exterior* 5partita, laciniis acuminatis: *interior* brevior, exteriori opposita...... Ditassa.
2. Corona *exterior* 5partita, cum v. absque lacinulis alternantibus, nanis: *interior* longior, exteriori alternans, foliolis basi solutis. Folliculi ramentacei .... Doemia.
3. Corona *exterior* cyathiformis v. annularis, crenulatus: *interior* longior: *utraque* carnosa. Folliculi graciles, læves .... Sarcostemma.

** Corona triplex, singula 5phylla, *extima* fauci inserta laciniis opposita; *media* foliolis tripartitis; *intima* indivisis .... EUSTEGIA.

†† Tubus stamineus nudus.

1. Faux corollæ campanulatæ coronata dentibus 5, tubum decurrentibus .... METASTELMA.
2. Faux corollæ urceolata, nuda. Tubus squamis 5, inclusis, cum fasciculis totidem pilorum alternantibus .... MICROLOMA.
3. Faux corollæ suburceolata, nuda. Tubus esquamatus, pilosiusculus .... ASTEPHANUS.

B. CORPUSCULA STIGMATIS (5) EXSULCA. Singula apice affigentia Massas pollinis 4, sessiles, subsimiles. Tubus stamineus appendiculatus. Corolla rotata .... SECAMONE.

II. POLLINIS MASSÆ (5-20) GRANULOSÆ (granulis e sphærulis 4 connatis compositis) 1-4 apici dilatato, soluto, corpusculi singuli stigmatis, applicatæ.

1. Filamenta basi connata, suprà distincta. Antheræ cohærentes, imberbes. Massæ pollinis 4, corpusculo singulo affixæ. Corolla rotata .... HEMIDESMUS.
2. Filamenta longitudinaliter distincta. Antheræ cohærentes, barbatæ. Massa pollinis 1, corpusculo singulo affixa. Corolla rotata, squamis faucis aristatis .... PERIPLOCA.
3. Filamenta longitudinaliter distincta. Antheræ imberbes. Massæ pollinis 4, corpusculo singulo affixæ. Corolla hypocrateriformis........ GYMNANTHERA.

19] ASCLEPIADEÆ.

Contortarum genera, *Linn.* Apocinearum genera, *Juss.* Apocynarum genera, *Adans.*

CALYX quinquedivisus, persistens.

COROLLA monopetala, hypogyna, quinqueloba, regularis, æstivatione imbricata, rarissime valvata, decidua.

STAMINA 5, epipetala, laciniis limbi alternantia. *Filamenta* sæpius connata. *Antheræ* biloculares, septisve semicompletis nunc subquadriloculares. *Pollen* ad dehiscentiam antherarum coalescens in massas numero loculorum, rariusve per paria confluentes, et geminatim, v. quaternatim, v. solitarie processubus quinque stigmatis affixas.

OVARIA 2. *Styli* 2, arctè approximati, sæpe brevissimi. *Stigma* ambobus commune, dilatatum, pentagonum, angulis corpusculiferis.

FOLLICULI 2; altero nunc abortiente. *Placenta* suturæ intus applicata, demum libera.

SEMINA numerosa, imbricata, pendula, ad umbilicum 20] sæpissimè comosa. *Albumen* tenue. *Embryo* dicotyledoneus, rectus. *Cotyledones* foliaceæ. *Radicula* supera. *Plumula* inconspicua.

Frutices, rariùsve *Herbæ*, utplurimum lactescentes et volubiles. *Folia* integra, opposita, quandoque alterna v. verticillata, ciliis interpetiolaribus loco stipularum sæpiùs instructa. *Flores* subumbellati, fasciculati, v. racemosi, interpetiolares.

I. ASCLEPIADEÆ VERÆ. [21

Massæ Pollinis 10, læves, per paria, (diversis antheris pertinentia), affixæ stigmatis corpusculis, sulco longitudinali, bipartibilibus. *Filamenta* connata, extus sæpius appendiculata.

CEROPEGIA. [Ceropegiæ pleræque, *Linn.*

CHAR. *Corolla* tubo e basi ventricosâ cylindraceo; limbi laciniis ligularibus.

Columna fructificationis inclusa.

Corona staminea duplex, *exterior* abbreviata, 5loba: *interior* 5phylla, foliolis ligularibus, indivisis, lobis exterioris oppositis.

Antheræ apice simplices.

Massæ pollinis erectæ, basi affixæ, marginibus simplicibus.

Stigma muticum.

Folliculi cylindracei, læves. *Semina* comosa.

HABITUS. *Herbæ* glabræ, volubiles. *Radice* tuberosa. *Umbellæ* interpetiolares, nunc paucifloræ.

PATRIA. India Orientalis.

OBS. To this genus belong *C. Candelabrum*, Linn.; *C. biflora*, Linn.; *C. tuberosa, bulbosa, juncea, acuminata*, of Roxburgh, and two undescribed species.

HUERNIA. [Stapeliæ species, *Linn. Juss. Masson.* [22

CHAR. *Corolla* campanulata, limbo decemfido, laciniis accessoriis nanis, dentiformibus.

Columna fructificationis inclusa.

Corona staminea duplex; *exterior* quinquefida, laciniis bifidis: *interior* 5phylla, foliolis e basi gibbosâ subulatis, indivisis, laciniis exterioris alternantibus.

Antheræ apice simplices.

Massæ pollinis erectæ, basi affixæ, altero margine cartilagineo-pellucido.

Stigma muticum.
Folliculi subcylindracei, læves. *Semina* comosa.
Habitus Stapeliæ.
Patria. Africa Australis.

Obs. The whole of the third section of Stapelia in Willdenow's edition of the "Species Plantarum," probably belongs to this genus; but I have only had an opportunity of examining *S. campanulata*, *venusta*, and *guttata*, from which the character is formed. I have named the genus in memory of Justus Huernius, one of the earliest collectors of Cape plants, and from whose drawings the first account of Stapelia was taken.

[23] PIARANTHUS. [Stapeliæ sp. *Masson.*

Char. *Corolla* campanulata, 5fida, carnosa.
Columna fructificationis inclusa.
Corona staminea simplex, 5phylla, foliolis dorso dentatis.
Antheræ apice simplices.
Massæ pollinis erectæ, basi affixæ, altero margine cartilagineo-pellucido.
Stigma muticum.
Folliculi. . . . . .
Habitus Stapeliæ.
Patria. Africa Australis.

Obs. The want of the external corona renders it necessary to separate from Stapelia and Huernia, this genus; of which the only two certain species are *Stapelia punctata* and *pulla* of Masson; of both these I have examined specimens collected by Masson, and preserved in spirits, in the collection of Sir Joseph Banks.

STAPELIA. [Stapeliæ plures, *Linn. et Mass.*

Char. *Corolla* rotata, 5fida, carnosa.
Columna fructificationis exserta.
Corona staminea duplex, utraque in variis varia; interior quandoque obsoleta.
Antheræ apice simplices.

Massæ pollinis basi affixæ, altero margine cartilagineo-pellucido.

Stigma muticum.

Folliculi subcylindracei, læves. *Semina* comosa.

HABITUS. *Plantæ* carnosæ, aphyllæ, angulatæ, sæpe [24 tuberculatæ. *Flores*, utplurimum speciosi, odore nauseoso, stercorario.

PATRIA. Africa Australis, præsertim in planitiis desertis, argillaceis, *Karroo* nuncupatis.

OBS. The essential character of this extensive and singular genus, consists, according to Linnæus and all subsequent botanists, in the double corona. But I have already shewn, that certain plants that have been referred to it, and which entirely accord in habit, have a corona of a single series; and it will hereafter appear, that other, and very different genera, agree with Stapelia in this part of its structure. The genus, even as it is here limited, is capable of further subdivision; and I have little doubt, that when the species become better known, such a subdivision will be found expedient, and probably from characters like the following, by which, in the mean time, it may be disposed into very natural sections.

I. Corona exterior 5*phylla, foliolis indivisis.*

Stapelia hirsuta, *Linn.* sororia, *Mass.* vetula, *Mass.* ambigua, *Mass.* asterias, *Mass.* glandulifera, *Mass.* stellaris, *Jacq. ined.*

II. Corona exterior 5*partita, laciniis bifidis.*

Stapelia revoluta, *Mass.* pedunculata, *Mass.* verrucosa, *Mass.* mixta, *Mass.* variegata, *Linn.* lepida, *Jacq. ined.* [25

III. Corona exterior 1*phylla, indivisa vel ciliato-multifida.*

Stapelia articulata, *Hort. Kew. et Mass.* geminata, *Mass.*, aliæque ineditæ, in Museo Banksiano, spir. vin. asservatæ.

CARALLUMA.

CHAR. *Corolla* rotata, profundè 5fida.
Columna fructificationis exserta.
Corona staminea simplici serie 10phylla; foliolis quinque antheris oppositis indivisis; reliquis bipartitis, subulatis.
Antheræ apice simplices.
Massæ pollinis erectæ, basi affixæ, marginibus simplicibus.
Stigma muticum.
Folliculi graciles, læves. *Semina* comosa.
HABITUS ferè Stapeliæ.
PATRIA. India Orientalis.

OBS. This genus is the *Stapelia adscendens* of Roxburgh, the *Car-allum* of the Telingas.

MICROSTEMMA.

CHAR. *Corolla* rotata, 5fida.
Columna fructificationis exserta.
Corona staminea monophylla, carnosa, 5loba, lobis cum antheris alternantibus.
26] *Antheræ* apice simplices.
Massæ pollinis medio lateri insertæ, stigmati incumbentes.
Stigma muticum.
Folliculi graciles, læves. *Semina* comosa.
HABITUS. *Herba* glabra, erecta. *Radix* tuberosa. *Caulis* infrà simplex, foliis minutis; suprà ramosus, foliis oppositis linearibus. *Umbellæ* laterales et terminales, subsessiles. *Corollæ* nigro-purpureæ intùs barbatæ.
PATRIA. Nova Hollandia tropica.

HOYA.

CHAR. *Corolla* rotata, 5fida.
Corona staminea 5phylla, foliolis depressis, carnosis, angulo interiore producto in dentem antheræ incumbentem.

Antheræ membranâ terminatæ.

Massæ pollinis basi affixæ, conniventes, compressæ.

Stigma depressum, papillâ obtusâ.

Folliculi læves. *Semina* comosa.

Habitus. *Caulis* suffruticosus, volubilis, v. decumbens. *Folia* opposita, carnosa, v. membranacea. *Umbellæ* interpetiolares, multifloræ.

Patria. India Orientalis, China, et Nova Hollandia tropica.

Obs. I have named this genus in honour of Mr. Thomas Hoy, whose merits as an intelligent and successful [27 cultivator have been long known to the botanists of this country. I have added specific characters of the only two species with which I am acquainted; but *Hoya carnosa* probably includes several species, which can only be determined from living specimens: it is also to be considered as the type of the genus, *Hoya viridiflora* differing in some degree in the structure of its corona, and considerably in habit.

1. H. *carnosa*, foliis ovali-oblongis carnosis, corollis barbatis, coronæ foliolis subtus sulcatis!

Asclepias carnosa, *Linn. suppl.* 170. *Murr. syst. veg. ed.* 14, *p.* 260. *Willd. sp. pl.* 1, *p.* 1264. *Pers. syn.* 1, *p.* 275. *Sims in bot. magaz. t.* 788. *Smith, exot. bot.* 2, *p.* 21, *t.* 70.

Stapelia Chinensis, *Lour. Cochin.* 1, *p.* 205, fide specim. ab auctore missi in Herb. Banks.

Hab. In Asiæ tropicæ variis regionibus, etiam in Nova Hollandia (ubi et in hort. Angl. v. v.)

2. H. *viridiflora*, foliis ovatis acuminatis membranaceis corollisque glabris, coronæ foliolis exsulcis.

Asclepias volubilis, *Linn. suppl.* 170*. *Willd. sp. pl.* 1, *p.* 1269. *Pers. syn.* 1, *p.* 276.

Watta-haka-codi, *Rheed. Malab.* 9, *p.* 25, *t.* 15.

Hab. Inter frutices in nemorosis Zeylonæ, *J. G. Kœnig*, in Herb. Banks. (ubi v. s.)

28] TYLOPHORA.

Char. *Corolla* rotata, 5partita.

Corona staminea 5phylla, foliolis depressis, carnosis, angulo interiori simplici edentulo.

Antheræ membranâ terminatæ.

Massæ pollinis erectæ, basi affixæ, marginibus simplicibus.

Stigma muticum.

Folliculi læves. *Semina* comosa.

Habitus. *Herbæ* v. *suffrutices* volubiles. *Folia* opposita, membranacea, plana. *Umbellæ* interpetiolares. *Flores* utplurimum parvi.

Patria. Nova Hollandia, præsertim intra tropicum, sed usque ad grad. 33. lat. aust. India Orientalis, et Africa æquinoctialis. Octo species nobis cognitæ, quarum nullæ adhucdum editæ sunt.

MARSDENIA.

Char. *Corolla* urceolata, 5fida, nunc subrotata.

Corona staminea 5phylla, foliolis compressis, indivisis, intus edentulis.

Antheræ membranâ terminatæ.

Massæ pollinis erectæ, basi affixæ.

Folliculi læves. *Semina* comosa.

Habitus. *Suffrutices* sæpiùs volubiles. *Folia* opposita, latiuscula, plana. *Cymæ*, nunc *Thyrsi*, interpetiolares.

Stigma sæpiùs muticum, quandoque rostratum, rostro indiviso vel bifido.

29] Patria. India Orientalis et Nova Hollandia; rarius in America Meridionali, et Syria.

Obs. This genus differs from Pergularia, chiefly in the want of the inner laciniæ of the corona: it is therefore an arbitrary separation, and made principally to obtain clearer characters for both. The two species, with an elongated stigma, are perhaps not truly of this genus, but if separated from it, must form each a distinct genus.

It is named in honour of William Marsden, Esq.,

F.R.S., late Secretary to the Admiralty, and author of a very judicious and learned "History of Sumatra," in which, though it is evident that he has not made botany his particular study, he has had the merit of turning the attention of botanists to several valuable plants, among others, to the Camphor-Tree of Sumatra, and to a species of this genus, *Marsdenia tinctoria*, said to afford the best indigo in that island.

† *Stigma muticum.* Marsdeniæ veræ.

1. M. *velutina*, caule volubili, foliis cordatis latè ovatis acuminatis tomentosis mollibus, cymis umbelliformibus, fauce nudâ.
HAB. In Nova Hollandia, intra tropicum, (ubi v. v.)

2. M. *tinctoria*, caule volubili, foliis cordatis ovato- [30
oblongis acuminatis glabriusculis basi anticè glandulosis, thyrsis lateralibus, fauce barbatâ.
Tarram akkar. *Mars. Sumat.* 78.
HAB. In insula Sumatra. (v. s. in Herb. Banks.)

3. M. *viridiflora*, caule volubili, foliis oblongo-lanceolatis glabriusculis basi obtusa, tubo intus villosiusculo.
HAB. In Nova Hollandia, intra tropicum, (ubi v. v.)

4. M. *clausa*, caule volubili, foliis lanceolatis utrinque acutis glabris: supra parum rugosis, fauce densè barbatâ.
HAB. In Jamaica. *Swartz.* (in Herb. Banks. ubi v. s.)

5. M. *suaveolens*, caule suberecto, foliis ovali-lanceolatis glabris aveniis, tubo ventricoso, fauce barbatâ.
HAB. In Nova Hollandia, extra tropicum, (ubi v. v.)

6. M. *cinerascens*, caule erecto, foliis ovatis obtusiusculis venosis pube rarâ conspersis, petiolis semuncialibus, corollis subrotatis.
HAB. In Nova Hollandia, intra tropicum, (ubi v. v.)

31] †† *Stigma rostratum.*

7. M. *erecta,* caule erecto, foliis cordatis ovatis acutis, cymis umbelliformibus, limbi laciniis imberbibus tubo 4-5ies longioribus.

Cynanchum erectum, *Linn.*

8. M. *rostrata,* caule volubili, foliis ovatis subcordatis acuminatis glabris, umbellis multifloris, limbo barbato.

Hab. In Nova Hollandia extra tropicum, (ubi v. v.)

PERGULARIA. [Pergulariæ species, *Linn.*

Char. *Corolla* hypocrateriformis, tubo urceolato.

Corona staminea 5phylla, foliolis compressis apice indivisis, intus lacinulâ auctis.

Antheræ membranâ terminatæ.

Massæ pollinis erectæ, basi affixæ.

Stigma muticum.

Folliculi ventricosi, læves. *Semina* comosa.

Habitus. *Plantæ* volubiles. *Folia* latiuscula, membranacea. *Cymæ* interpetiolares. *Flores* flavescentes, odoratissimi.

Patria ignota: in China et India Orientali ob flores suaveolentes culta.

Obs. Of this genus the only certain species are Pergularia odoratissima, *Roxb. et Smith,* and P. minor, *And. Repos.* 160. Pergularia purpurea, *Vahl.* and Japonica, *Thunb.* may belong to it. P. edulis of Thunberg, prod. cap. is pro-
32] bably very different. When Linnæus established this genus in his Mantissa, he certainly meant his character to apply to *Pergularia glabra,* of which he had a specimen in his herbarium, and which is the Flos Pergulanus of Rumphius; but unfortunately this plant does not belong to the order of Asclepiadeæ, but to that section of Apocineæ of which I shall hereafter treat. The character of Linnæus was no doubt chiefly taken from a plant of

P. odoratissima, that had flowered in the Upsal Garden, and which he confounded with the Asclepias cordata of Forskael, an error long since pointed out by Dr. Smith in his very accurate and satisfactory account of Pergularia odoratissima.

DISCHIDIA.

CHAR. *Corolla* urceolata, 5fida.

Corona staminea 5phylla, foliolis bifidis, laciniis subulatis, patentibus, apice recurvis.

Antheræ membranâ terminatæ.

Massæ pollinis erectæ, basi affixæ.

Stigma muticum.

Folliculi læves. *Semina* comosa.

HABITUS. *Herba* in arboribus parasitica, dependens, perennis, lactescens, farinâ albâ tota conspersa. *Caulis* ad genicula radicans. *Folia* opposita, subrotunda, crassa, carnosa. *Flores* parvi, subumbellati.

PATRIA. India Orientalis, præsertim Insulæ Moluc- [33
canæ, necnon Nova Hollandia, ubi prope Endeavour River detexit *Illust. Banks.*

GYMNEMA.

CHAR. *Corolla* suburceolata 5fida. *Fauce* sæpe coronatâ, squamulis denticulisve 5, sinubus insertis.

Corona staminea nulla.

Antheræ membranâ terminatæ.

Massæ pollinis erectæ, basi affixæ.

Folliculi graciles, læves. *Semina* comosa.

HABITUS. *Suffrutices* sæpius volubiles. *Folia* opposita, membranacea, plana. *Umbellæ* interpetiolares, cymosæ.

PATRIA. India Orientalis, Nova Hollandia tropica, et Africa æquinoctialis.

OBS. Of this genus I have examined four species. Two of these are unpublished plants; the third is Asclepias lactifera *Linn.*, of which there is no specimen in the

Linnean Herbarium: it therefore rests entirely upon Hermann's specimens, which, though collected 140 years ago, were by maceration in water so far recovered, as to enable me with certainty to determine its genus. The fourth is Periploca sylvestris, *Willd. sp. pl.* 1, *p.* 1252.

34] LEPTADENIA.

Char. *Corolla* subrotata, *tubo* brevi, *fauce* coronata, squamis 5 sinubus impositis: *limbo* barbato, æstivatione valvata.

Corona staminea nulla.

Antheræ liberæ, apice simplices.

Massæ pollinis erectæ, basi affixæ, apice coarctato pellucido!

Stigma muticum.

Folliculi . . . .

Habitus. *Herbæ?* perennes? volubiles, tomento impalpabili, pulvereo, cinerascentes. *Folia* plana, opposita. *Umbellæ* interpetiolares, quandoque cymosæ. *Corpuscula* stigmatis minuta.

Patria. India Orientalis, Africa æquinoctialis et septentrionalis.

Obs. Of this genus I have examined three species in the Banksian Herbarium, none of which are as yet described, though one of them was collected by Forskael; it is unnamed, however, and does not correspond with any of his descriptions.

SARCOLOBUS.

Char. *Corolla* subrotata, 5fida. *Fauce* nudâ.

Corona staminea nulla.

Antheræ membranâ terminatæ.

35] *Massæ pollinis* erectæ, basi affixæ.

Stigma muticum.

Folliculi ventricosi, carnosi. *Semina* marginata!

Habitus. *Frutex* volubilis, glaber. *Folia* opposita, latiuscula. *Umbellæ* interpetiolares, multifloræ.

Patria. Java; in Prince's Island, prope Bataviam, detexit *Illust. Banks.*

GONOLOBUS.

[*Richard? in Mich. Fl. Bor. Amer.*
Cynanchi species, *Linn. Jacq.*

Char. *Corolla* subrotata, 5partita.

Corona staminea scutelliformis, lobata.

Antheræ transversim dehiscentes, membranâ terminatæ.

Massæ pollinis extremitati exteriori respectu loculi affixæ stigmate tectæ.

Stigma planiusculo-depressum.

Folliculi ventricosi, subcostati. *Semina* comosa.

Habitus. *Suffrutices* volubiles. *Folia* opposita, latiuscula. *Umbellæ* interpetiolares.

Patria. America, præsertim intra tropicos.

Obs. Cynanchum maritimum *Linn.* suberosum *Linn.*
crispiflorum *Hort. Kew.* belong to this genus; and I suppose also C. planiflorum, grandiflorum, rostratum, nigrum,
racemosum, Carolinense, obliquum, hirtum, prostratum,
and undulatum of Willdenow's *Spec. Plant.*: these, how- [36
ever, I have not determined, and the whole genus requires
to be re-examined.

MATELEA.

[*Aubl. Gujan. tab.* 109, Hostea.
Willd. sp. pl. 1, *p.* 1274.

Char. *Corolla* rotata, 5partita.

Corona staminea scutelliformis, lobata.

Antheræ transversim dehiscentes, membranâ terminatæ.

Massæ pollinis extremitate exteriore respectu loculi affixæ, stigmate tectæ.

Stigma planiusculo-depressum.

Folliculi ventricosi, costati. *Semina* calva. (*Aubl.*)

HABITUS. *Frutex* erectus. *Folia* opposita, basi supra biglandulosa. *Flores* racemosi, laterales.

PATRIA. America meridionalis.

ASCLEPIAS. [Asclepiadis sp. *Linn.*

CHAR. *Corolla* 5partita, reflexa.

Corona summo tubo filamentorum imposita, 5phylla, foliolis cucullatis, e fundo exserentibus processum aversum corniformem.

Antheræ membranâ terminatæ.

Massæ pollinis compressæ, apice attenuato affixæ, pendulæ.

Stigma depressum, muticum.

Folliculi læves. *Semina* comosa.

37] HABITUS. *Herbæ* erectæ. *Folia* opposita, nunc alterna! vel verticillata. *Umbellæ* interpetiolares.

PATRIA. America Septentrionalis.

OBS. The species of this genus which I have examined, are *A. Syriaca*, (most improperly so called, as it is a native of North America only), *amœna*, *purpurascens*, *variegata*, *curassavica*, *nivea*, *elevata*, *parviflora*, *incarnata*, *decumbens*, *verticillata*, *tuberosa*, of Willdenow's Spec. Plant., and some unpublished species in the Banksian Herbarium; and there can be little doubt that *A. pulchra*, *citrifolia*, *Mexicana*, *linaria*, *rubra*, and all the species of Michaux, belong to it.

GOMPHOCARPUS. [Asclepiadis sp. *Linn.*

CHAR. *Corolla* 5partita, reflexa.

Corona summo tubo filamentorum imposita, 5phylla, foliolis cucullatis utrinque unidentatis, intus simplicibus.

Antheræ membranâ terminatæ.

Massæ pollinis compressæ, apice attenuato affixæ, pendulæ.

Stigma depressum, muticum.

Folliculi ventricosi, spinis innocuis echinati.

Semina comosa.

Habitus. *Frutices* v. suffrutices erecti. *Folia* opposita, margine sæpe revolutæ. *Umbellæ* interpetiolares. [38

Patria. Africa Australis.

Obs. *Asclepias arborescens, fruticosa* and *setosa*, are the three certain species of this genus; but *A. crispa* has probably the same structure. The flowers I have examined, but have not seen the fruit. *A. pubescens* ought probably to be altogether omitted; for, according to the description and specimen in Linnæus's Herbarium, it is *A. arborescens*, while according to the reference to Plukenet, it is *A. crispa*. This observation I have copied from Mr. Dryander's notes.

XYSMALOBIUM. [Asclepiadis sp. *Linn.*

Char. *Corolla* 5fida, patens.

Corona staminea summo tubo filamentorum imposita, simplici serie decempartita, laciniis 5 antheris oppositis carnosis, subrotundis, intus simplicibus; 5 reliquis nanis.

Antheræ membranâ terminatæ.

Massæ pollinis compressæ, apice affixæ, pendulæ, processubus connectentibus latiusculis.

Stigma muticum.

Folliculi ventricosi, ramentacei. *Semina* comosa.

Habitus. *Frutices* erecti. *Folia* opposita. *Umbellæ* interpetiolares. *Flores* majusculi, limbo nunc barbato. [39

Patria. Africa Australis.

Obs. This genus at present consists of only two species, *Asclepias undulata* and *grandiflora*.

CALOTROPIS. [Asclepiadis sp. *Linn.*

Char. *Corolla* sub-campanulata, tubo angulato, angulis intus saccatis, limbo 5partito.

Corona staminea 5phylla, foliolis carinæformibus, tubo filamentorum longitudinaliter adnatis, basi recurvâ.

Antheræ membranâ terminatæ.

Massæ pollinis compressæ, apice attenuato affixæ, pendulæ.

Stigma muticum.

Folliculi ventricosi, læves. *Semina* comosa.

HABITUS. *Frutices* erecti, glabri. *Folia* opposita, lata. *Umbellæ* interpetiolares. *Flores* speciosi.

PATRIA. India Orientalis, et Persia.

[[1] SPECIES. Asclepias gigantea et procera.]

KANAHIA.

CHAR. *Corolla* campanulata, limbo 5partito.

Columna semi-inclusa.

Corona staminea apice tubi filamentorum imposita, 5phylla, foliolis e basi incrassatâ subulatis, indivisis.

Antheræ membranâ terminatæ.

40] *Massæ pollinis* ventricosæ, apice affixæ, pendulæ.

Stigma muticum.

Folliculi graciles, striati. *Semina* comosa?

HABITUS. *Frutex?* erectus. *Folia* opposita, plana. *Pedunculi* interpetiolares, apice fasciculatim multiflori, pedicellis imbricatis, basi unibracteatis.

PATRIA. Arabia, [1][et Abyssinia.]

OBS. Asclepias laniflora, *Forsk. Ægypt. Arab.* p. 51, KANAHH of the Arabs, is the only species of the genus. I have examined the flowers of an original specimen. The account of the fruit is taken from Forskael's description, and Vahl's figure.

OXYSTELMA.

CHAR. *Corolla* rotata, patens.

Columna exserta.

Corona staminea 5phylla, foliolis acutis, indivisis.

Antheræ membranâ terminatæ.

---

[1] Added in MS. by the author.

Massæ pollinis compressæ, apice attenuato affixæ, pendulæ.

Stigma muticum.

Folliculi læves. *Semina* comosa.

HABITUS. *Suffrutices* volubiles, glabri. *Folia* opposita. *Racemi* v. *umbellæ* interpetiolares.

PATRIA. India Orientialis et Nova Hollandia?

OBS. Periploca esculenta, *Linn. Suppl. Roxb. Corom.* [41 1, *p.* 13, *t.* 11, is the type of the genus, and perhaps the only genuine species; for a New Holland plant which I have at present joined with it, differs considerably both in the form of its corolla and that of its corona.

OXYPETALUM.

CHAR. *Corolla* tubo brevi ventricoso; limbo 5partito, laciniis supra ligulatis.

Corona staminea 5phylla, foliolis subrotundis simplicibus, carnosis.

Antheræ membranâ terminatæ.

Massæ pollinis lineares, pendulæ, affixæ curvaturæ processuum, dein adscendentium.

Stigma acumine elongato bipartito.

Folliculi . . . . . .

HABITUS. *Frutex* volubilis. *Folia* opposita, cordata. *Umbellæ* subcorymbosæ, interpetiolares. *Flores* suaveolentes.

PATRIA. America Meridionalis.

OBS. The genus consists of a single species, which was discovered in 1768, near Rio de Janeiro, by Sir Joseph Banks.

DIPLOLEPIS.

CHAR. *Corolla* tubo brevi, urceolato, limbo 5partito.

Corona staminea 5phylla, foliolis obtusis squamulâ [42 interiori auctis.

Antheræ membranâ terminatæ.

Massæ pollinis ventricosæ, juxta apicem affixæ, pendulæ.

Stigma rostro elongato indiviso.

Folliculi . . . . .

HABITUS. [[1] *Frutex* decumbens, glaber. *Folia* oblonga, mucronulata, coriacea. *Cymæ* congestæ, extraalares et terminales.]

PATRIA. America Australis.

OBS. Only one certain species is known, which was discovered by my friend *Mr. Archibald Menzies*, in Chili, near Valparaizo.

Asclepias vomitoria of Kœnig's MSS., of which I have examined specimens in the Banksian Herbarium, agrees with this genus in many respects, especially in the form and insertion of its masses of pollen, but differs considerably in appearance, and in having a blunt stigma.

HOLOSTEMMA.

CHAR. *Corolla* subrotata, 5fida.

Corona imo tubo stamineo inserta, simplex, annularis, integra.

Antheræ membranâ terminatæ.

Massæ pollinis pendulæ, compressæ, apice attenuato affixæ.

Stigma muticum.

Folliculi ventricosi, læves. *Semina* comosa.

HABITUS. *Frutex* volubilis, glaber. *Folia* opposita, lata. *Umbellæ* interpetiolares, subsessiles. *Flores* speciosi.

43] PATRIA. India Orientalis.

OBS. This is Ada-Kodien, *Rheed. Mal.* 9, *p.* 9, *t.* 7, in which the leaves are represented alternate, an error that is corrected in the description, which is excellent, and well accords with a specimen in the Banksian Herbarium collected by Dr. Patrick Russell.

---

[1] Added in MS. by the author.

CYNANCHUM. [Cynanchi sp. *Linn.*

CHAR. *Corolla* subrotata, 5partita.

Corona staminea monophylla, 5-20loba, dum 5fida lobis antheris oppositis.

Antheræ membranâ terminatæ.

Massæ pollinis ventricosæ, pendulæ.

Stigma apiculatum.

Folliculi læves. *Semina* comosa.

HABITUS. *Plantæ* perennes, vel *suffrutices*, utplurimum volubiles. *Folia* opposita. *Umbellæ* interpetiolares.

PATRIA varia, a gradu 59° lat. bor.! usque ad 32° lat. aust.

OBS. Though I have here very much limited the Linnean genus Cynanchum, yet it appears still to contain the elements of several genera: I shall therefore add the characters of all the species I am acquainted with, divided into such sections as will probably hereafter be considered distinct genera.

I. Corona staminea tubulosa, columnam includens, ore [44 5-10fido. Laciniæ 5 interiores antheris exterioribusque oppositæ et parallelæ.

Massæ pollinis infra apicem insertæ.

Stigma apiculo semibifido.

Folliculi cylindracei, divaricati.

Caulis volubilis. *Folia* cordata.

1. C. *acutum*, foliis oblongo-ovatis cordatis acutis, corollæ laciniis oblongis obtusis.

Cynanchum acutum, *Linn.*, cum synonymis.

2. C. *Monspeliacum*, foliis reniformibus: apice coarctato semi-lanceolato, laciniis corollæ lanceolatis obtusiusculis.

Cynanchum Monspeliacum, *Linn.*, cum synonymis.

OBS. Forsan haud distinctum a priori.

3. C. *Chinense*, foliis ovatis cordatis: acumine brevi,

laciniis corollæ lanceolato-linearibus acutis, coronæ laciniis 5 exterioribus compresso-filiformibus integris.

HAB. In Chinæ provincia Pecheley, *Georgius Staunton, Baronettus*. (v. s. in Herb. Banks.)

45] *II. Corona staminea* tubulosa, columnam includens, ore 5-10fido, carinis decem interioribus simplicibus v. in lacinulas supra productis.

Massæ pollinis infra apicem insertæ.

Stigma apiculo emarginato.

Folliculi ventricosi, angulati, patentes.

Caulis volubilis. *Folia* cordata.

4. C. *pedunculatum*, pedunculo communi foliis glabriusculis longiore, carinis interioribus coronæ in lacinulas productis.

HAB. In Nova Hollandia tropica (ubi v. v.)

5. C. *floribundum*, pedunculo communi foliis glaberrimis breviore, carinis interioribus coronæ in lacinulas productis.

HAB. In Nova Hollandia extra tropicum (ubi v. v.)

6. C. *erubescens*, carinis interioribus coronæ 10fidæ corolla brevioris simplicibus, pedunculo communi petiolum æquante, ramulis floribusque extus pubescentibus.

HAB. In Nova Hollandia tropica, ubi a *Josepho Banks, Baronetto*, detectum.

7. C. *pauciflorum*, carinis interioribus coronæ 5fidæ corollam æquantis simplicibus, pedunculo communi petiolo breviore, ramulis floribusque glabris.

46] Periploca tunicata, *Retz. obs.* 2, *p.* 15. *Willd. phyt.* 1, *p.* 7, *n.* 23, *t.* 5, *f.* 3. *Willd. sp. pl.* 1, *p.* 1252.

HAB. In India Orientali. (v. s. in Herb. Banks.)

III. Corona staminea tubulosa, columnam includens, ore 5-10fido, laciniis carinisve interioribus nullis.

Massæ pollinis apice sæpius affixæ.
Stigma apiculo bifido.
Caulis volubilis. *Folia* subcordata.

8. C. *pilosum,* foliis ovatis acutiusculis calycibusque pilosis, corona 10fida longitudine corollæ.

Periploca Africana, *Linn.*, cum synonymis.

HAB. In Africa Australi prope Promont. B. Spei. (ubi v. v.)

9. C. *crassifolium,* foliis ovatis subcordatis obtusis cum mucronulo carnosis calycibusque glabris, corona 10fida longitudine corollæ.

Cynanchum obtusifolium, *Linn. suppl.* 169?

HAB. In Africa Australi. (v. s. in Herb. Banks.)

10. C. *Capense,* foliis ovatis cordatis obtusis cum mucronulo caulibusque glabris, calycibus pubescentibus, corona 5fida corollâ duplo breviore.

Cynanchum Capense, *Linn. suppl.* 168?

HAB. In Africa Australi. (v. s. in Herb. Banks.)

IV. Corona staminea tubulosa, columnam includens, [47
ore 10fido, intus laciniis carinisve nullis.
Massæ pollinis apice affixæ.
Stigma apiculo integro.
Caulis erectus.

11. C. *roseum,* foliis lanceolato-linearibus undulatis glabriusculis, pedicellis calycibusque pilosis.

Asclepias foliis ex lineari-lanceolatis, floribus umbellatis, umbellis alternis erectis, caule erecto. *Gmel. Sib.* 4, *p.* 78, *t.* 42.

Asclepias Davurica, *Willd. sp. pl.* 1, *p.* 1272?

HAB. In Siberia. *P S. Pallas,* in Herb. Banks.

V. Corona scutelliformis, carnosa, 5-10loba, intus simplex.
Massæ pollinis infra apicem affixæ.

Stigma apiculo brevissimo, integro.
Folliculi læves.
Caules erectiusculi.

12. C. *Vincetoxicum*, caule erecto, corollis imberbibus, pedicellis umbellæ simplicis pedunculo communi triplo longioribus, corona 5loba.
Asclepias Vincetoxicum, *Linn.*
HAB. In Europa: in Suecia, etiam ad 59° 40′ Lat.

48] 13. C. *medium*, caule supernè volubili, corollis imberbibus, pedicellis umbellæ sæpe divisæ pedunculo communi vix longioribus, corona 5loba.
HAB. . . . Specimen e Hort. Reg. Paris. in Herb. Banks.
Sequenti proximum.

14. C. *nigrum*, caule supernè volubili, corollis barbatis, pedicellis umbellæ simplicis pedunculo communi vix longioribus, corona semidecemfida.
Asclepias nigra, *Linn.*
HAB. In Europa Australi.

VI. Corona profundè 5fida, laciniis simplicibus.
Massæ pollinis infra apicem affixæ.
Stigma papilla emarginata.
Folliculi ventricosi.

15. C. *Sibiricum*, foliis lanceolato-linearibus oppositis ternisque, caule decumbente.
Asclepias Sibirica, *Linn.*
HAB. In Siberia, etiam in China. (v. s. in Herb. Banks.)
OBS. Vix hujus generis.

METAPLEXIS.

CHAR. *Corolla* subrotata.
Corona staminea 5phylla, foliolis nanis, cucullatis, cum antheris alternantibus.

Antheræ membranâ terminatæ.

Massæ pollinis ventricosæ, pendulæ, latere fixæ. [49

Stigma rostro elongato indiviso.

Folliculi . . . . . .

Habitus. *Suffrutex* volubilis, glaber. *Folia* cordata. *Racemi* pedunculati, interpetiolares. *Corollæ* limbus barbatus.

Patria. China, in provincia Pechéley. *Georgius Staunton, Baronettus.*

DITASSA.

Char. *Corolla* subrotata.

Corona staminea duplex; *exterior* 5partita, laciniis acuminatis; *interior* 5phylla, brevior, exteriori antherisque opposita.

Antheræ membranâ terminatæ.

Massæ pollinis ventricosæ, infra apicem affixæ, pendulæ.

Stigma apiculo obtuso.

Folliculi . . . . . .

Habitus. *Suffrutex* volubilis, glaber. *Folia* opposita, plana. *Umbellæ* interpetiolares.

Patria. America Meridionalis, Brasilia, ubi prope Rio de Janeiro detexit *Josephus Banks, Baronettus.*

DŒMIA. [50

Char. *Corolla* subrotata, tubo brevi.

Corona staminea duplex, *exterior* brevis, 10partita, laciniis alternis nanis; *interior* 5phylla, foliolis basi solutis, supra subulatis.

Antheræ membranâ terminatæ.

Massæ pollinis compressæ, apice affixæ, pendulæ.

Stigma muticum.

Folliculi ramentacei. *Semina* comosa.

Habitus. *Caulis* volubilis. *Folia* opposita, cordata. *Flores* umbellati.

Patria. India Orientalis, et Africa Æquinoctialis.

Obs. Asclepias cordata, *Forsk. Arab. p.* 49, and Cynanchum extensum, *Jacq. ic.* 1, *t.* 54, are the only certain species of the genus: from the latter, Asclepias scandens, *Palis. Flor. D'Oware,* 1, *p.* 92, *t.* 56, is probably not distinct, and Cynanchum bicolor, *And. Repos.* 562, is very nearly related to it.

SARCOSTEMMA.

Char. *Corolla* rotata.

Corona staminea duplex; *exterior* cyathiformis v. annularis, crenata; *interior* 5phylla, exteriorem superans, foliolis carnosis.

Antheræ membranâ terminatæ.

51] *Massæ pollinis* apice affixæ, pendulæ.

Stigma submuticum.

Folliculi graciles, læves. *Semina* comosa.

Habitus. *Caulis* volubilis v. decumbens, aphyllus, articulatus, v. foliis oppositis distantibus. *Flores* umbellati, laterales v. terminales.

Patria. India Orientalis, Nova Hollandia, et Africa.

Obs. To this genus belong Cynanchum viminale, *Linn.*; a species nearly allied to it from New Holland and New Caledonia; and Asclepias viminalis, *Linn.*, all of which I have examined. The probable species are, Asclepias aphylla, *Thunb. prod.*; Asclepias stipitacea, *Forsk. Arab.* 50; Cynanchum pyrotechnicum, and perhaps also Asclepias aphylla, of the same author.

EUSTEGIA.

Char. *Corolla* rotata.

Corona triplex; singula 5phylla; *extima* fauce inserta laciniis limbi opposita; *reliqua* extimâ alternantia, antheris opposita, foliolis *mediæ* tripartitis, *intimæ* indivisis.

Antheræ membranâ terminatæ.

Massæ pollinis apice attenuato affixæ, pendulæ.

Stigma submuticum.
Folliculi . . . . . .
Habitus. *Herba* decumbens, humilis. *Folia* opposita, hastata. *Flores* subumbellati. [52
Patria. Africa Australis.

Obs. This remarkable character is taken from Apocynum hastatum, *Thunb. Prod.* 47; A. minutum, *Linn. Suppl.* 169, and from a very nearly related species found at the Cape of Good Hope, by Mr. Ferdinand Bauer.

METASTELMA.

Char. *Corolla* subcampanulata; *Fauce* coronatâ dentibus 5 exsertis, sinubus oppositis, tubum decurrentibus.
Corona staminea nulla.
Antheræ membranâ terminatæ.
Massæ pollinis compressæ, apice attenuato affixæ, pendulæ.
Stigma muticum.
Folliculi . . . . . .
Habitus. *Planta* perennis, volubilis, glabra. *Folia* opposita, membranacea. *Umbellæ* interpetiolares, subsessiles. *Flores* parvi.
Patria. America Meridionalis.

Obs. This is the Cynanchum parviflorum of *Swartz*, whose description, however, of the corona, in *Flor. Ind. oc.* 1, *p.* 537, does not agree with ours, which was taken from excellent specimens in the Banksian Herbarium, collected in the islands of St. Croix and St. Christopher, [53 *Masson* and *Von Rohr*.

MICROLOMA. [Ceropegiæ sp. *Linn. Jacq.* Ceropegia *Lam. Illust. Gen. tab.* 179.

Char. *Corolla* urceolata, tubo ventricoso, angulato, fauce nudâ, limbo breviore.

Squamæ 5, inclusæ, medio tubo sub sinubus insertæ, totidem fasciculis villorum alternantes.

Corona staminea nulla.

Antheræ membranâ terminatæ, sagittatæ.

Massæ pollinis compressæ, apice affixæ, pendulæ.

Stigma apiculatum.

Folliculi . . . . . .

HABITUS. *Suffrutices* volubiles. *Folia* opposita. *Umbellæ* interpetiolares.

PATRIA. Africa Australis.

OBS. This genus is formed from the two Cape species of *Ceropegia*, viz. *sagittata* and *tenuiflora*, plants which are widely different from the original species of that genus.

1. M. *sagittatum*, foliis sagittatis pubescentibus, corollæ limbo acutiusculo.

Ceropegia sagittata, *Linn. mant.*

2. M. *lineare*, foliis linearibus glabris, corollæ limbo obtusissimo.

Ceropegia tenuiflora, *Linn.*

54] ASTEPHANUS. [Apocyni sp. *Lin. fil.* et *Thun.*

CHAR. *Corolla* subcampanulata, fauce tuboque esquamatis.

Corona staminea nulla.

Antheræ membranâ terminatæ.

Massæ pollinis pendulæ.

Stigma caudatum, v. muticum.

Folliculi . . . .

HABITUS. *Plantæ* perennes, sæpius volubiles. *Folia* opposita.

Umbellæ interpetiolares. *Flores* parvi.

PATRIA. Africa Australis.

OBS. This generic character is formed from *Apocynum triflorum* and *lineare, Linn. suppl.*, and from two new species

in the Banksian collection. Apocynum cordatum and lanceolatum, *Thunb. prod.*, probably likewise belong to the genus; and I have modified the character, to admit a very remarkable plant, found by Mr. Masson in South Africa, the stem of which is shrubby with spinescent branches, the leaves extremely minute, opposite, distant, and heartshaped; the corolla rather urceolate than bellshaped; the orifice of the tube furnished with deflected hairs; the masses of pollen are fixed by their attenuated apices; the stigma is blunt; the folliculi nearly cylindrical and smooth, with seeds of the usual structure. The whole genus is evidently [55 very near akin to Microloma, and differs chiefly in the want of squamæ within the tube. They might, therefore, be united; but this would lead to the junction also of Metastelma, a native of the West India Islands, which I am unwilling to join with these South African plants.

II.

Massæ pollinis 20, læves, quaternatim (duabus antheris pertinentes), affixæ apici corpusculorum exsulcorum stigmatis.

Filamenta connata, extus appendiculata.

SECAMONE.

[Periplocæ sp. *Linn.*

CHAR. *Corolla* rotata.

Corona staminea 5phylla.

Massæ pollinis erectæ quaternatim affixæ apici corpusculi subsimilis, exsulci stigmatis.

Stigma apice coarctato.

Folliculi . . . . . .

HABITUS. *Frutices* erecti v. volubiles, glabri. *Folia* opposita. *Cymæ* dichotomæ, interpetiolares. *Flores* minuti.

PATRIA. Africa, India Orientalis, et Nova Hollandia tropica.

OBS. From the extreme minuteness of the parts, no genus has been more difficult to determine than this: it is, however, perfectly natural and distinct, and is evidently the 56] connecting link between the true Asclepiadeæ, and the Periploceæ, which follow. I have examined five species, of which two are published plants, viz. Periploca secamone *Linn.* and emetica of *Retz.* and *Willdenow.* The third is a climber, a native of India, discovered by Dr. Roxburgh; and two are erect shrubs, natives of the tropical part of New Holland.

III. PERIPLOCEÆ.

Massæ pollinis 5-20, granulosæ, (granulis e sphærulis 4 compositis), solitariæ, usque quaternatim apici dilatato corpusculi singuli stigmatis affixæ.

Filamenta partim v. omnino libera.

HEMIDESMUS. [Periplocæ sp. *Linn.*

CHAR. *Corolla* rotata, squamis 5, sub sinubus, obtusis.

Filamenta basi connata, supra distincta. *Antheræ* cohærentes, a stigmati liberæ, imberbes, apice simplices.

Massæ pollinis 20.

Stigma muticum.

Folliculi cylindracei, divaricatissimi, læves. *Semina* comosa.

HABITUS. *Frutices* volubiles, glabri. *Folia* opposita, nitida. *Flores* interpetiolares, congesti, parvi.

PATRIA. India Orientalis.

57] OBS. This genus, whose name is derived from the partial connection of the stamina, is composed of *Periploca Indica,* and two very nearly related unpublished species. Its strict affinity to Periploca is unquestionable, but the differences in the structure of its flower appear to me sufficient to justify its separation from that genus.

PERIPLOCA. [Periplocæ sp. *Linn.*

CHAR. *Corolla* rotata. *Squamis* 5 faucis laciniis alternatibus, aristatis.

Filamenta distincta. *Antheræ* cohærentes, dorso barbatæ.

Massæ pollinis apici dilatato corpusculi stigmatis applicitæ, solitariæ, e quatuor confluentibus.

Stigma submuticum.

Folliculi cylindracei, divaricatissimi, læves. *Semina* comosa.

HABITUS. *Frutices* sæpius volubiles, glabri. *Folia* opposita, nitida. *Flores* subcorymbosi interpetiolares.

PATRIA. Europa Australis. Syria. Africa Septentrionalis et Æquinoctialis.

OBS. Periploca Græca, and lævigata, are the two principal species of the genus. P. angustifolia, *Billard.* no doubt also belongs to it; and I have seen a fourth and very remarkable species brought from Sierra Leone by [58 Professor Afzelius, on account of which I have been obliged slightly to modify the character.

GYMNANTHERA.

CHAR. *Corolla* hypocrateriformis. *Corona* faucis 5phylla.

Filamenta distincta, fauci inserta. *Antheræ* imberbes.

Massæ pollinis quaternatim applicitæ apici dilatato corpusculorum.

Stigma apiculo bifido.

Folliculi cylindracei, læves, divaricatissimi. *Semina* comosa.

HABITUS. *Frutex* volubilis, glaberrimus. *Folia* opposita, nitida. *Pedunculi* laterales sub-dichotomi. *Flores* albo-virescentes, imberbes.

PATRIA. Nova Hollandia, intra tropicum.

(Table facing page 59.)

APOCINEÆ.

SECT. I. SEMINA COMOSA.

I. SEMINA AD EXTREMITATEM UMBILICALEM (superiorem) COMOSA. Embryo planus.

A. FAUX COROLLÆ NUDA, nec coronata.
  a. Tubus corollæ intus absque squamulis denticulisve.
    † Stamina inclusa.
      * Antheræ medio stigmate cohærentes. Squamulæ 5 hypogynæ distinctæ, raro connatæ. Corollæ laciniæ dimidiatæ .... **ECHITES.**

      ** Antheræ a stigmate solutæ.
        1. Corpuscula 5 hypogyna, filiformia. Antheræ sagittatæ, lobis posticis polline vacuis. Corollæ laciniæ falcatæ .... **ICHNOCARPUS.**
        2. Corpuscula nulla hypogyna. Antheræ lanceolatæ, longitudinaliter polliniferæ. Corollæ laciniæ æquilateres .... **HOLARRHENA.**

    †† Stamina exserta; medio stigmate cohærentes.
      * Filamenta fauci inserta.
        1. Filamenta apice simplici. Squamæ nullæ hypogynæ. Corolla hypocrateriformis, limbo 5partito .... **ISONEMA.**
        2. Filamenta apice extus gibbere carnoso. Squamæ 5 hypogynæ, basi connatæ. Corolla subhypocrateriformis, limbo 5fido .... **VALLARIS.**
      ** Filamenta medio v. juxta basin tubi inserta; filiformia, simplicia. Squamæ 5 hypogynæ, distinctæ v. connatæ.
        1. Folliculi duo, placentis liberis .... **PARSONSIA.**
        2. Capsula bilocularis, septo parallelo placentifero .... **LYONSIA.**

b. Tubus corollæ intus squamis denticulisve 5 inclusis. Stamina inclusa. Styli nulli. Squamæ 5 hypogynæ.
   1. Corolla campanulata. Denticuli acuti tubi laciniis limbi oppositi .... APOCYNUM.
   2. Corolla infundibuliformis. Squamulæ obtusæ tubi laciniis limbi alternantes .... CRYPTOLEPIS.

B. FAUX COROLLÆ CORONATA, squamis (tubulove) exsertis.

* Corona monophylla, cum vel absque squamis interioribus.
   1. Corona duplex; *exterior* annularis integerrimus; *interior* e squamis 5 laciniis limbi alternantibus. Urceolus hypogynus .... PRESTONIA.
   2. Corona simplex, tubulosa, crenulata. Squamæ nullæ hypogynæ, sed 10 basi calycis extra corollam impositæ. Corollæ laciniæ æquilateres. Antheræ mucrone brevissimo........ BALFOURIA.

** Corona simplici serie polyphylla.
   1. Coronæ foliola divisa. Squamæ nullæ hypogynæ. Corollæ laciniæ ecaudatæ inæquilateres. Antheræ elongato-aristatæ .... NERIUM.
   2. Coronæ foliola 10 indivisa. Squamæ 5 hypogynæ. Corollæ laciniæ caudatæ .... STROPHANTHUS.

II. SEMINA AD EXTREMITATEM UMBILICO OBVERSAM (inferiorem) **COMOSA.** Embryo cotyledonibus involutis. Corolla fauce coronata .... WRIGHTIA.

III. SEMINA PELTATA, CILIATA, UTRAQUE EXTREMITATE CILIIS ELONGATIS COMOSA. Corolla hypocrateriformis, fauce nuda. Stamina inclusa, antheris liberis. Squamæ 0 hypogynæ .... ALSTONIA.

59]

APOCINEÆ.

Sect. I. SEMINA COMOSA.

A. *Coma ad extremitatem umbilicalem* (*superiorem*) *seminis.*

ECHITES. [*Brown.* Echitides pleræq. *Jacq.*
Echitidis species, *Linn.*

Char. *Corolla* hypocrateriformis, fauce tuboque esquamatis. Laciniis limbi 5partiti inæquilateris.

Stamina inclusa. *Antheræ* sagittatæ, medio stigmati cohærentes, lobis posticis polline vacuis.

Ovaria 2. *Stylus* 1, filiformis.

Squamæ 5 hypogynæ.

Folliculi graciles.

Habitus. *Frutices* volubiles. *Folia* opposita, ciliis interpetiolaribus glandulosis. *Pedunculi* interpetiolares, multiflori. *Flores* utplurimum speciosi, albi, lutei et purpurei.

Patria. America Meridionalis.

Obs. Of Echites I have only examined *E. umbellata,* the original species when the species was established by Brown 60] in his " History of Jamaica;" *biflora, circinalis,* and *Domingensis:* but, from the descriptions and figures of authors, especially of Jacquin, Swartz, and the authors of the " Flora Peruviana," I without hesitation refer to it the following species: E. suberecta *Jacq.* repens *Jacq.* agglutinata *Jacq.* asperuginis *Swartz,* torulosa *Jacq.* acuminata *Fl. Peruv.* laxa *Fl. Peruv.* hirsuta *Fl. Peruv.* E. quinquangularis, *Jacq.* and annularis, *Linn. Suppl.* are probably not genuine species, on account of the prominent

ring of the faux, and E. glandulosa *Fl. Peruv.* which according to the figure has a crown of 5 entire laciniæ and the segments of the corolla equal-sided, must be excluded from this genus. E. siphilitica, the specimen of which in the Linnean Herbarium I have seen but not sufficiently examined, is somewhat doubtful. E. floribunda, corymbosa and spicata are removed to another genus. The two remarkable species of South Africa, E. bispinosa and succulenta, require further examination; for their peculiar habit indicates their being a distinct genus from Echites, which it would be desirable to limit to the species of tropical America: hence it will be necessary to re-examine certain plants of India that in many respects agree with this genus, especially Tsjeria-pupal-valli of *Rheed, Mal.* 7, *p.* 103, *t.* 55, which appears to differ from Echites chiefly in having a calyx longer than the tube of the corolla, in the scales surrounding the ovarium being united, (which, however, is [61 also the case in E. Domingensis,) and in the greater quantity and density of the albumen, which is between fleshy and cartilaginous.

The authors of the "Flora Peruviana" have reformed the character of Echites, but the scales which they describe between the calyx and corolla will certainly not materially assist in distinguishing this genus from those most nearly related to it; and I have observed a nearly similar structure in most of the genera of this family, as well as of Asclepiadeæ: these scales, however, truly belong to the calyx, and are either five or ten in number, or more rarely consist of an uninterrupted series of ciliæ, not unlike those which so frequently occur within the footstalks of the leaves. My observations are not sufficiently numerous to enable me to determine whether their modifications might not generally assist in characterizing genera, and I have, therefore, very seldom had recourse to them.

ICHNOCARPUS.

Char. *Corolla* hypocrateriformis, limbi laciniis dimidiatis, fauce tuboque esquamatis.

Stamina inclusa. *Antheræ* sagittatæ, a stigmate liberæ.
Ovaria 2. *Stylus* 1, filiformis. *Stigma* ovatum, acuminatum.
62] *Filamenta* 5, hypogyna, staminibus alternantia.
Folliculi graciles.
Habitus. *Frutex* oppositifolius. *Panicula* terminalis, brachiata. *Flores* parvi.
Patria. India Orientalis et Zeylona.

Obs. This is the Apocynum frutescens *Linn.*, of which I have examined the original specimen in Hermann's herbarium. The Quirivelia Zeylanica of Lamarck and Poiret, in *Encycl. method. botan. vol.* 6, *p.* 42, considered by them as Linnæus's plant, must, from the description, be widely different, and probably does not belong to the same natural family.

HOLARRHENA.

Char. *Corolla* hypocrateriformis, laciniis æquilateris, fauce tuboque esquamatis.
Stamina inclusa, imo tubo inserta. *Antheræ* a stigmate liberæ, lanceolatæ, integræ, longitudinaliter polliniferæ.
Ovaria 2. *Stylus* brevissimus. *Stigma* cylindraceum.
Squamæ nullæ hypogynæ.
Folliculi graciles.
Habitus. *Frutices* erecti, glabri. *Folia* membranacea. *Cymæ* terminales et laterales.
Patria. India Orientalis et Zeylona.

Obs. This genus consists of two species; one of which is 63] Carissa mitis, *Vahl, symb.* 3, *p.* 44: a specimen of this, so named by Kœnig, I have examined in the Banksian Collection.

ISONEMA.

Char. *Corolla* hypocrateriformis; fauce tuboque esquamatis; limbo 5partito.

Stamina exserta. *Filamenta* fauci inserta, apice simplicia. *Antheræ* sagittatæ, medio stigmati cohærentes.

Ovaria 2. *Stylus* 1, filiformis. *Stigma* incrassatum, obtusum.

Squamæ nullæ hypogynæ.

Folliculi . . . . . .

Habitus. *Frutex* erectus? oppositifolius, pilosus. *Panicula* terminalis, brachiata, floribus corymbosis. *Calycis* foliola basi intus squamâ duplici. Corollæ (semuncialis) tubus cylindraceus, intus medio barbatus.

Patria. Africa Æquinoctialis. (*H. Smeathman*, in Herb. Banks.)

VALLARIS. [*Burm. Ind.* 51. Pergulariæ sp. *Linn.*

Char. *Corolla* hypocrateriformis; fauce tuboque esquamatis, limbo 5fido obtuso.

Stamina exserta. *Filamenta* fauci inserta, brevissima, apice extus gibbere carnoso. *Antheræ* sagittatæ, medio stigmati cohærentes.

Ovarium biloculare. *Stylus* filiformis. *Stigma* conicoovatum.

Squamæ 5, hypogynæ, basi connatæ, apicibus ciliatis. [64

Folliculi. . . . . .

Habitus. *Frutex* volubilis, oppositifolius. *Pedunculi* interpetiolares, dichotomi. *Flores* corymbosi, suaveolentes.

Patria. India Orientalis.

Obs. This is the Flos Pergulanus of Rumphius, which Linnæus considered as the first species of his genus Pergularia: it does not, however, belong to the same order with the plant that afforded his generic character, and to which the name has been since generally applied.

PARSONSIA. [Echitidis sp. *Jacq.* et *Swartz.*

Char. *Corolla* infundibuliformis, fauce tuboque esquamatis, limbo 5partito, recurvo, laciniis æquilateris.

Stamina exserta. *Filamenta* medio v. juxta basin tubi inserta, filiformia. *Antheræ* sagittatæ, medio stigmati cohærentes, lobis posticis polline destitutis.

Ovaria 2, v. 1, biloculare. *Stylus* 1. *Stigma* dilatatum.

Squamæ 5, hypogynæ, distinctæ, v. connatæ.

Folliculi 2, distincti, v. cohærentes.

HABITUS. *Frutices* volubiles. *Folia* opposita. *Flores* 65] cymosi, v. racemosi, racemis sæpe compositis, terminales v. interpetiolares, parvi, colore in variis vario.

PATRIA. America Meridionalis et Australasia.

OBS. The American species of this genus, viz. Echites corymbosa *Jacq.* floribunda *Sw.* and spicata *Jacq.* differ considerably from the rest, which are natives of New Holland and New Zealand. Among these, the only published species is Periploca capsularis, *Forst. prod. n.* 126. When the fruit of all has been examined, they will probably be divided in the following manner:

† *Americanæ.* Ovariis duobus. Folliculis distinctis.
†† *Australasienses.* Ovario biloculari. Folliculis longitudinaliter cohærentibus.

The genus is named in memory of Dr. JAMES PARSONS, the author of a Dissertation on the Analogy between the Propagation of Animals and that of Vegetables, and of an unfinished work, entitled, "The Microscopical Theatre of Seeds." The Parsonsia of Brown, which Linnæus reduced to Lythrum, is a species of Cuphea.

66] LYONSIA.

CHAR. *Corolla* infundibuliformis, fauce tuboque esquamatis, limbo 5partito, recurvo, laciniis æquilateris: æstivatione valvata.

Stamina exserta. *Filamenta* medio tubo inserta, filiformia. *Antheræ* sagittatæ, medio stigmati cohærentes, lobis posticis polline vacuis.

Ovarium biloculare. *Stylus* 1, filiformis, apice dilatato. *Stigma* subconicum.

Squamæ 5, hypogynæ, connatæ.

Capsula cylindracea, bilocularis, valvis folliculiformibus, dissepimento parallelo libero utrinque seminifero.

HABITUS. *Frutex* volubilis. *Folia* opposita. *Cymæ* terminales, trichotomæ. *Flores* inter minores, limbo barbato.

PATRIA. Nova Hollandia.

OBS. This genus is perhaps too nearly related to the New Holland portion of Parsonsia, from which it differs chiefly in its fruit being capsular. It is named in memory of ISRAEL LYONS, author of "Fasciculus Plantarum circa Cantabrigiam nascentium," and from whom Sir Joseph Banks received his earliest instructions in botany.

APOCYNUM. [Apocyni sp. *Linn.* et *Juss.* [67

CHAR. *Corolla* campanulata. *Tubus* denticulis 5, acutis, inclusis, laciniis limbi oppositis. *Faux* nuda.

Stamina inclusa. *Antheræ* sagittatæ, medio stigmati cohærentes, lobis posticis polline vacuis.

Ovaria 2. *Styli* subnulli. *Stigma* dilatatum, apice conico.

Squamæ 5, hypogynæ.

Folliculi graciles, distincti.

HABITUS. *Herbæ* perennes, erectæ. *Folia* opposita, membranacea. *Flores* cymosi.

PATRIA. America Borealis, et Europa Australis.

OBS. The Linnean genus Apocynum at present contains many plants widely different from the species of which it originally consisted. Most of the spurious species I have already referred to different genera, and I here add specific characters of all the genuine species with which I am acquainted.

1. A. *androsæmifolium*, foliis ovatis glabris, cymis terminalibus lateralibusque, tubo corollæ calycem bis superante.

Apocynum androsæmifolium, *Linn.*

68] 2. A. *cannabinum,* foliis lanceolatis utrinque acutis glabris, cymis paniculatis, calyce tubum corollæ æquante.

Apocynum cannabinum, *Linn.*

3. A. *hypericifolium,* foliis oblongis glabris brevissimè petiolatis mucronatis: basi obtusa subcordata, cymis folio brevioribus, calyce tubum corollæ æquante.

Apocynum hypericifolium, *Hort. Kew.*

4. A. *pubescens,* foliis ovato-oblongis mucronatis; basi obtusis; utrinque cymaque breviore pubescentibus, calyce corollam subæquante.

Hab. In Virginia. *Mitchell,* in Herb. Banks. (ubi v. s.)

5. A. *Sibiricum,* foliis ovato-oblongis mucronatis glabris; basi obtusa, cymis terminalibus pedunculatis pulvereo-pubescentibus, tubo corollæ calycem superante.

Hab. In salsis desertorum Astrachanensium. *P. S. Pallas, M.D.,* in Herb. Banks. (ubi v. s.)

6. A. *Venetum,* foliis oblongo-ellipticis glabris mucronatis; basi subattenuata, cymis paniculatis lateralibus terminalibusque, calyce tubum corollæ æquante.

Apocynum venetum, *Linn.*

69] CRYPTOLEPIS.

Char. *Corolla* infundibuliformis. *Tubus* squamulis 5, obtusis, inclusis, laciniis limbi alternantibus. *Faux* nuda.

Stamina inclusa, imo tubo inserta. *Antheræ* sagittatæ.

Ovaria 2. *Styli* 0. *Stigma* dilatatum, apiculo conico.

Squamulæ 5, hypogynæ.

Folliculi . . . . . .

Habitus. *Frutex* volubilis. *Folia* opposita, paginis discoloribus, inferiore venosa. *Corymbi* interpetiolares subsessiles brevissimi.

Patria. India Orientalis. (*Franciscus Buchanan, M.D.,* in Herb. Banks.)

PRESTONIA.

Char. *Corolla* hypocrateriformis. *Faux* coronata *tubulo* annulari indiviso *squamis*que 5, interioribus laciniis limbi alternantibus.

Antheræ semi-exsertæ, sagittatæ, medio stigmati cohærentes, lobis posticis polline vacuis.

Ovaria 2. *Stylus* 1, filiformis, apice dilatato. *Stigma* turbinatum apiculo angustiore.

Urceolus hypogynus, 1-phyllus.

Folliculi . . . . . .

Habitus. *Frutex* volubilis, tomentosus. *Folia* opposita, tomentosa. *Corymbi* congesti interpetiolares. *Calyx* [70 foliaceus, laciniis basi intus squamulâ instructis.

Patria. America Meridionalis.

P. *tomentosa.*

Hab. In sepibus prope Rio de Janeiro, in Brasilia, detexit *Josephus Banks, Baronettus.*

Obs. This genus is named in memory of Dr. Charles Preston, the correspondent of Ray, and styled by him, "eruditissimus vir, et curiosissimus stirpium observator." Many of his observations, chiefly on the more minute plants, occur in Ray's "Methodus emendata." Blair also mentions him as an ingenious and expert botanist.

BALFOURIA.

Char. *Corolla* infundibuliformis. *Faux* coronata tubulo crenulato. Limbi laciniæ rectæ, æquilateres.

Stamina semi-exserta, fauci inserta. *Antheræ* sagittatæ, medio stigmati cohærentes, mucronatæ.

Ovarium biloculare. *Stylus* 1, filiformis, apice dilatato. *Stigma* angulatum.

Squamulæ 10, basi calycis extra corollam insertæ: hypogynæ nullæ.

Folliculi . . . . . .

Habitus. *Arbor* inter minores. *Folia* opposita, lanceo-

71] lato-linearia, falcata, denticulis interpetiolaribus. *Cymæ* trifidæ, laterales et terminales.

PATRIA. Nova Hollandia tropica.

OBS. I have named this genus in memory of Sir ANDREW BALFOUR, the founder of the Edinburgh Botanic Garden and Museum, of whose merits in natural history, especially in botany, an interesting account is given by his friend Sir Robert Sibbald, in a small volume, entitled, "Memoria Balfouriana."

NERIUM. [Nerii sp. *Linn.* et *Juss.*

CHAR. *Corolla* hypocrateriformis. *Faux* coronata foliolis lacero-multifidis. Limbi laciniis tortis, inæqualateris, ecaudatis.

Stamina. *Filamenta* medio tubo inserta. *Antheræ* sagittatæ aristatæ, medio stigmati cohærentes.

Ovaria 2. *Stylus* 1, filiformis, apice dilatato. *Stigma* obtusum.

Squamæ nullæ hypogynæ . . . . denticuli in basi calycis, extra corollam.

Folliculi cylindracei.

HABITUS. *Frutices* erecti. *Folia* terna, elongata, coriacea, venis numerosis, parallelis.

PATRIA. India Orientalis.

72] OBS. The only true species of Nerium are, *N. Oleander, odorum,* and probably *salicinum, Forsk.*

Nerium Zeylanicum and antidysentericum, form a very distinct genus, which I have named *Wrightia.* N. coronarium is probably a *Tabernæmontana,* and N. divaricatum, from an examination of the specimen in Hermann's Herbarium, on which this species entirely rests, I believe to be the same plant. Nerium obesum, Forsk., seems to be *sui generis:* it cannot, at least, be a Nerium.

STROPHANTHUS, *Decandolle*. [Echitidis sp. *Linn.*

Char. *Corolla* infundibuliformis. *Faux* coronata squamulis decem, indivisis. Limbi laciniæ caudatæ.

Stamina medio tubo inserta. *Antheræ* sagittatæ, aristatæ, v. mucronatæ.

Ovaria 2. *Stylus* 1, filiformis, apice dilatato. *Stigma* subcylindraceum.

Squamæ 5, hypogynæ.

Folliculi . . . . . .

Habitus. *Frutices* sarmentosi. *Folia* opposita.

Patria. Africa Æquinoctialis, et India Orientalis.

B. *Coma ad extremitatem umbilico obversam* (*inferiorem*) *seminis*. [73

WRIGHTIA. [Nerii sp. *Linn.*

Char. *Corolla* hypocrateriformis. *Faux* coronata squamis decem, divisis.

Stamina exserta. *Filamenta* fauci inserta. *Antheræ* sagittatæ, medio stigmati cohærentes.

Ovaria 2, cohærentia. *Stylus* 1, filiformis, apice dilatato. *Stigma* angustius.

Squamæ 5-10, basi calycis extra corollam insertæ.

Folliculi distincti, v. cohærentes, placentis adnatis.

Habitus. *Frutices* erecti, arboresve minores. *Folia* opposita. *Corymbi* subterminales. *Flores* albi. *Albumen* 0. *Embryo* cotyledonibus longitudinaliter involutis, albus, aquâ calidâ immersus roseus evadit!

Patria. India Orientalis, Zeylona, Archipelago Malaica, et Nova Hollandia tropica.

Obs. Gærtner has given an excellent account of the fruit of this genus, in his description of Nerium Zeylanicum, and he no doubt supposed, that the fruit of Nerium Oleander was essentially the same. It is, however, very remarkably different. And no genus is more distinct in habit, or more beautifully characterized than this, which I have dedicated to my much respected friend, William 74] Wright, M.D., F.R.S.L. & E., whose ardour in the pursuit of botanical knowledge, even while engaged in extensive medical practice, in the island of Jamaica, has long entitled him to this mark of distinction.

1. W. *antidysenterica*, foliis obovato-oblongis breviter acuminatis glabris, corymbis subterminalibus, tubo corollæ calyce 6ies longiore, folliculis distinctis.

Nerium foliis ovatis acuminatis petiolatis, *Linn. Flor. Zeyl.* 107, fide speciminis in herbario Hermanni.

Nerium antidysentericum, *Linn. sp. pl. ed.* 2, *p.* 306.

Hab. In Zeylona. *Hermann*, et *J. G. Kœnig*, in Herb. Banks.

Obs. Codaga pala, *Rheed. mal.* 1, *p.* 85, *t.* 47, vix hujus loci, præsertim ob diversam figuram foliorum, et coronæ defectum; ideoque forsan Holarrhenæ species.

2. W. *Zeylanica*, foliis oblongo-lanceolatis subacuminatis glabris, corymbis terminalibus, tubo corollæ calyce 4-5ies longiore, folliculis distinctis.

Nerium Zeylonicum, *Linn. Amœn. Acad.* 4, *p.* 309*.

Hab. In Zeylona. Exemplar visum ex Herbario fuit D. Van Royen, nunc in Museo Banksiano.

Obs. Præcedenti nimis affinis, diversa præsertim figura foliorum, quæ etiam paulo minora sunt.

3. W. *tinctoria*, foliis elliptico-lanceolatis ovatisque acu- 75] minatis glabris, ramis corymbisque divaricatis, corollæ tubo calyce duplo longiore, folliculis distinctis.

Hab. In India Orientali. *J. G. Kœnig, M.D.*, et *Gul. Roxburgh, M.D.*, in Herb. Banks. (ubi v. s.)

4. W. *pubescens*, foliis elliptico-oblongis acuminatis calycibusque pubescentibus, corymbis erectis, tubo corollæ calyce parum longiore, folliculis cohærentibus.

Hab. In Novæ Hollandiæ orâ septentrionali Arnhems Land, et in insula Timor prope Coepang, (ubi v. v.)

C. *Semina peltata, ciliata, utriusque extremitatis ciliis elongatis comosa.*

ALSTONIA. [Echitidis sp. *Linn.*

CHAR. *Corolla* hypocrateriformis, fauce tuboque esquamatis.

Stamina inclusa. *Antheræ* lanceolatæ, longitudinaliter polliniferæ, a stigmate liberæ.

Ovaria 2. *Stylus* 1, filiformis, apice dilatato. *Stigma* subconicum.

Squamulæ nullæ hypogynæ, nec calycinæ.

Folliculi teretes.

HABITUS. *Arbores* sæpe proceræ, lactescentes.

Folia verticillata vel opposita, costata, glabra.

Cymæ terminales, paniculatæ. *Flores* sæpius albi.

Folliculi plerumque longissimi.

PATRIA. India Orientalis, Archipelago Malaica, et [76 Insulæ Societatis.

OBS. Had Linnæus examined the fruit of this genus, or even attended to the figure given of it in the "Hortus Malabaricus" (of which work, it is proper to observe, he had not a copy), it is probable he would have distinguished it from Echites, to which it has so little affinity. As it is, I am happy in having it in my power to commemorate the merits of Dr. ALSTON, the predecessor of Dr. Hope, by so distinct and splendid a genus. The Alstonia of the Younger Linnæus, is, according to L'Heritier, a species of Symplocos.

1. A. *scholaris*, foliis verticillatis 5-7 obovato-oblongis obtusis costatis venaque margini approximata cinctis, cymis breviter pedunculatis, limbo corollæ parum barbatis, folliculis longissimis.

Pala, *Rheed. mal.* 1, *p.* 81, *t.* 45, optima.

Lignum scholare, *Rumph. amb.* 2, *p.* 246, *t.* 82, quoad descriptionem, sed figura potius sequentis.

Echites scholaris, *Linn. mant.* 53.

Hab. In India Orientali et in Insulis Moluccanis. (v. s. in Herb. Banks.)

2. A. *spectabilis*, foliis quaternis elliptico-oblongis sub-77] acuminatis costatis: margine simplicibus, cymis pedunculatis folio brevioribus, corolla limbo barbato, folliculis longissimis.

Hab. In Insula Timor prope Coepang, cum floribus fructibusque Aprili 1803 observavi.

Obs. Præcedenti quàm maximè affinis, sed reverà distincta, nec malè ab icone cit. Rumphii repræsentata; descriptio autem *A. scholari* melius convenit.

3. A. *venenata*, foliis quaternis oblongo-lanceolatis acuminatis basi attenuatis, cymis dichotomis, corollæ tubo sursum ampliato; limbo imberbi acuto, folliculis utrinque attenuatis folium vix æquantibus.

Hab. In India Orientali, *Gul. Roxburgh, M.D.* (v. s. in Herb. Banks.)

4. A. *costata*, foliis oppositis elliptico-oblongis acuminatis costatis, cymis effusis, limbi laciniis imberbibus lanceolatis tubo longioribus, folliculis longissimis.

Echites costata, *Forst. prod. n.* 123.

Hab. In Insulis Otaheite et Ulaietea, inter juga montium (insularibus Attahé nuncupata). *Josephus Banks, Baronettus.* (v. s. in Herb. Banks.)

Obs. Kametti-valli, *Rheed. mal.* 9, *p.* 23, *t.* 14, which is given in Willdenow's *sp. pl.* 1, *p.* 1240, as a synonyme of this plant, differs in the shortness of the folliculi, and in 78] having winged and naked seeds. Rheede also describes his plant as being a climber. The seeds of the Otaheite plant, which forms a moderate-sized tree, are distinctly

ciliated; but I am not certain that the ciliæ are so remarkably elongated at each extremity, as in the other species; and it may, therefore, be a connecting link between this section of Apocineæ, in which I have placed it, and the nearly related genera Plumeria, Cameraria, and Vinca.

ON

WOODSIA,

A NEW GENUS OF FERNS.

BY

ROBERT BROWN, Esq., F.R.S., Lib. Linn. Soc.

(Read November 7th, 1812.)

[*Extracted from ' The Transactions of the Linnean Society of London,' Vol. XI, pp.* 170—174.]

ON WOODSIA, [170

A NEW GENUS OF FERNS.

THERE is perhaps no tribe of cryptogamous plants which since the time of Linnæus has received greater additions to its number of species, or more considerable improvements in its systematic arrangement, than the *Filices;* and certainly no botanist has so essentially contributed to these improvements as the President of this Society; whose ingenious Essay on Dorsiferous Ferns may justly be considered as the groundwork of the more complete dissertations of Professors Swartz and Bernhardi, which have appeared since its publication.[1]

Linnæus, in his latest work, the 13th edition of the *Systema Vegetabilium,* enumerates scarcely more than 200 Ferns, which he referred to twelve genera: while the *Species Plantarum* of the late Professor Willdenow contains upwards of a thousand plants of the same order, arranged under forty-three genera. It is however remarkable, that of this vast number of species nearly one half belong to four of the Linnean genera, namely, *Polypodium, Acrostichum, Asplenium,* and *Pteris,* all of which were first proposed by Ray in his *Methodus Plantarum Emendata,* published in 1703; without names, indeed, but with characters [171 nearly similar to those of Linnæus.

It appears, therefore, that the arrangement of Ferns at present universally followed is not wholly new: and that it has not attained such a degree of perfection as to supersede all changes in nomenclature, may be inferred from the genus *Polypodium* alone, though reduced nearly one half by its present character, still including 157 species, or upwards of a seventh part of the whole order.

---

[1] An. 1793, in *Mém. de l'Académie Royale des Sciences de Turin,* vol. v, p. 401.

The expediency of subdividing *Polypodium,* as well as some of the other genera mentioned, especially *Acrostichum,* is indeed obvious, not merely on account of their great extent, but also from the striking differences in habit existing among the species referred to each.

I have, some time ago,[1] had an opportunity of remarking, that the plants referred to *Polypodium, P. ilvense* and *hyperboreum,* form a distinct genus, from the peculiar structure of their involucrum, even the existence of which had escaped preceding observers.

This genus I have named in honour of my friend Mr. Joseph Woods, whose merits as an accurate and skilful English botanist are well known to many of the members of this Society: and the object of the present communication is to illustrate it by some additional observations on its structure, and by a very perfect drawing, for which I am indebted to the friendship of Mr. Francis Bauer.

The character distinguishing *Woodsia* from all other genera of Ferns hitherto established, consists in its involucrum being inserted under the group of capsules, or, as it is technically called, the *sorus,* which it completely surrounds at the base; while it is in every stage open at the
172] top, having its margin divided into a number of capillary segments, which from their length and incurvation entirely conceal the young capsules, and in a great measure the full-grown.

That so singular a structure should have been hitherto unnoticed, even though both species of the genus have been described and figured since the publication of Dr. Smith's memoir, is not perhaps to be wondered at: for the membranaceous base of the involucrum is completely concealed by the capsules, and the marginal hairs, which alone are visible, exactly resembling the pubescence of the frond, have been universally confounded with it.

---

[1] *Prodr. Fl. Nov. Holl.* i, p. 158, Obs. IV.

The difficulty, too, of separating the membrane entire from the frond, to which, by the pressure of the capsules, it is closely applied, is so considerable, that, since the publication of my remark already quoted, its existence has been doubted by a botanist, whose opinion, especially in whatever regards this order of plants, is of peculiar weight, and in opposition to which I should not retain full confidence in my own observations, though frequently repeated, were they not so distinctly confirmed by Mr. Bauer's excellent drawing.

I first observed the involucrum six years ago in living plants of *Woodsia hyperborea*, and have since repeatedly ascertained its existence in dried specimens of the same species, and of *Woodsia ilvensis*. These two plants are indeed so nearly related, that I find myself unable to construct for them clear specific characters; and therefore, in proposing them here as distinct species, I am, from want of sufficient materials to determine the question, rather following the prevailing opinion than my own.

To the characters and synonyms which follow, I have not thought it necessary to add descriptions of the two supposed species, these having been given by several of the authors referred to, and in every respect correctly, except what regards the involucrum.

WOODSIA. [173

Sori dorsales, subrotundi.

Involucrum calyciforme apertum margine crinitum: includens *Capsulas* pedicellatas: receptaculo communi elevato nullo.

Filiculæ, *frondibus cæspitosis*, *pinnatim divisis; pilis simplicibus squamulisque angustis instructæ*.

1. *ilvensis*. W. frondibus bipinnatifidis, pinnis oblongis, pinnulis confluentibus multifloris: inferioribus subrepandis: infimis subæqualibus.

Polypodium ilvense, *Swartz, Synop. Fil.* 39. *Willden. Sp. Pl.* 5, *p.* 198. *Schkuhr, Crypt.* 16, *t.* 19.

Acrostichum ilvense. *Linn. Sp. Pl. ed.* 2, *p.* 1528.

Nephrodium lanosum. *Michaux, Amer.* 2, *p.* 198.

Habitat in rupibus Europæ et Americæ borealis. (*v. v.*) ♃.

2. *hyperborea.* W. frondibus pinnatis, pinnis triangularibus oblongisve inciso-pinnatifidis: lobis integerrimis paucifloris: antico baseos productiore. *Tab.* 38 (XI).

Polypodium hyperboreum. *Swartz, Synop. Fil.* 39. *Willden. Sp. Pl.* 5, *p.* 197. *Eng. Bot.* 2023.

Polypodium arvonicum. *Smith, Fl. Brit.* 3, *p.* 1115.*

Polypodium ilvense. *Withering, Arrang. ed.* 3, *t.* 3, *p.* 774.

Acrostichum hyperboreum. *Liljeblad in Act. Stockholm.* 1793, *p.* 201, *t.* 8*.

Acrostichum alpinum. *Bolton, Fil. Brit.* 76, *t.* 42.

Ceterach alpinum. *Lamarck et Decandolle, Fl. Fran.* 2, *p.* 567.

Habitat in Europæ alpibus (v. v.) ♃.

EXPLANATION OF TAB. 38 (XI). [174

FIG.

1. A native specimen of *Woodsia hyperborea*, natural size.
2. The stipes and lower part of the frond of the same plant, magnified 3 times in diameter.
3. A pinna of the same plant, magnified 10 diam.
4. A pinna from another specimen, in which the clusters of capsules (sori) are more numerous and confluent, 10 diam.
5. A single cluster of capsules within their involucrum, the membranaceous base of which they entirely conceal, magnified 50 diam. (2500 times in superficies).
6. The involucrum spread open, with only one capsule left in it, magnified 50 diam.

7. An unripe capsule.
8, 9. Side and back views of a ripe capsule.
10, 11. Capsule opening and entirely burst, shedding its seeds.
} magnified 50 diam.

12. A seed magnified 200 diam.
13. A frond of a cultivated plant of the same species, natural size.

OBSERVATIONS

ON

THE NATURAL FAMILY OF PLANTS

CALLED

COMPOSITÆ.

BY

ROBERT BROWN, F.R.S.,
CORRESPONDING MEMBER OF THE ROYAL INSTITUTE OF FRANCE, AND OF THE ROYAL ACADEMIES OF SCIENCES OF BERLIN AND MUNICH;
MEMBER OF THE WERNERIAN SOCIETY OF EDINBURGH, LIBR. LINN. SOC.

(READ FEB. 6TH AND 20TH, 1816.)

[*Extracted from 'The Transactions of the Linnean Society of London,' Vol. XII, pp.* 76—142.]

LONDON.

1817.

OBSERVATIONS ON COMPOSITÆ.

The class *Syngenesia* of the Linnean artificial system, [76 as at present limited, constitutes a family strictly natural, and by far the most extensive in the vegetable kingdom. It is also, with the exception of Grasses only, the most generally diffused, and is almost equally remarkable with that order, for the great apparent uniformity in the structure of its essential parts of fructification.

This class of plants, for which I retain the established name Compositæ, in preference to any of those recently proposed, has lately become the subject of a minute and accurate examination by Mons. Henri Cassini; two of whose Memoirs on the Style and Stamina of the class, already published in the Journal de Physique,[1] are in my opinion models for botanical investigation.

A few years before the publication of M. Cassini's Memoirs on Compositæ I was induced to examine a considerable part of this extensive family, chiefly with a view to the more accurate determination of the New Holland plants belonging to it.

My principal object in the present paper is to communicate such general observations, the results of this investigation, as either have not yet been published by M. Cassini, or respecting which I consider myself to have anticipated that author in my General Remarks on the Botany of New

---

[1] Of 1813 and 1814.

77] Holland, appended to Captain Flinders's Voyage to Terra Australis.

To these observations I shall add some remarks on certain genera of Compositæ, which occur repeatedly under different names in late systematic works, and whose structure and limits appear to be imperfectly understood.

My *first* observation relates to the peculiar disposition of the nerves or vessels of the corolla of this family of plants.

In the essay already mentioned, which appeared early in the summer of 1814, I have noticed this peculiarity in the following terms:[1]

"The whole of Compositæ agree in two remarkable points of structure of their corolla; which, taken together at least, materially assist in determining the limits of the class. The first of these is its valvular æstivation; this, however, it has in common with several other families. The second I believe to be peculiar to the class, and hitherto unnoticed. It consists in the disposition of its fasciculi of vessels or nerves; these, which at their origin are generally equal in number to the divisions of the corolla, instead of being placed opposite to these divisions, and passing through their axes, as in other plants, alternate with them; each of the vessels at the top of the tube dividing into two equal branches, running parallel to and near the margins of the corresponding laciniæ, within whose apices they unite. These, as they exist in the whole class and are in great part of it the only vessels observable, may be called primary. In several genera, however, other vessels occur, alternating with the primary, and occupying the axes of the laciniæ: in some cases these secondary vessels being most distinctly visible in the laciniæ, and becoming gradually fainter as they descend the tube, might be regarded as recurrent; originating from the united apices of the primary 78] branches; but in other cases, where they are equally distinct at the base of the tube, this supposition can hardly be admitted. A monopetalous corolla, not splitting at the

---

[[1] *Vol. i, p.* 30.]

base, is necessarily connected with this structure, which seems also peculiarly well adapted to the dense inflorescence of Compositæ; the vessels of the corolla and stamina being united and so disposed as to be least liable to suffer by pressure."

At the date of this publication I certainly had no knowledge of any similar observations having been previously made: but I now see in M. Cuvier's account of the proceedings of the Institute of France for 1815, that M. Cassini is considered to have anticipated me on this subject, and as he says in "termes non équivoques." What these terms are, appears by a letter I have received from M. Cassini himself, in which he states his claim to rest on the following passage:

"Chaque fleur hermaphrodite ou male contient cinq étamines, correspondant aux cinq nervures de la Corolle et *par conséquent* alternes avec ses lobes."

This passage occurs in a Memoir on the Stamina of Compositæ, which was read to the Institute of France in July 1813, and first appeared with the substance of that Memoir in the Journal de Physique, said to be for April 1814; but the actual date of the publication of which I have reason to believe was somewhat later, and very nearly corresponding with that at which M. de Jussieu was in possession of a copy of my essay containing the observations already quoted. I conclude it is not supposed I could have been acquainted with the passage in the original memoir, unless the report usually made on memoirs read to the Institute should have been printed, and should have actually noticed this passage, or the discovery it is now said to contain.

But independently of the near equality of dates, I cannot consider my observations as either wholly or even in any [79 considerable degree anticipated by the passage in question. My observations notice not only the disposition of the five vessels in the tube of the corolla, but their ramification in the laciniæ, by no means a necessary consequence of that disposition; they notice also the existence, in several genera of Compositæ, of five vessels alternating with those, and which I considered secondary in this order, though they occupy the place of the primary vessels in other families: and it is this inverted disposition, indicated in the greater part of the class by the primary being the only vessels existing, which I have considered as of material importance in determining the limits of Compositæ, though by no means as affording an essential practical character for the whole class.

In the passage quoted from M. Cassini (the only one I can find relative to the subject in the memoir in which it occurs), the existence of five nerves or vessels in the tube of the corolla, alternating with its laciniæ, is stated, but their division and disposition in the laciniæ are not noticed; it is at the same time to be inferred from the terms of the passage, that no other vessels exist in the tube of the corolla: and it is equally evident that, so far from announcing this disposition of vessels as a discovery, or peculiar to the order, the author rather considers it either as a fact already known, or as the usual structure. That M. Cassini was not then aware of the importance of the fact which he had imperfectly stated, appears likewise from his having, many months after his memoir was read, and at a time when he says he had finished his analysis of the corolla, proposed a name for the class, taken from a supposed peculiarity in the structure of the filament, a name which he is now inclined to abandon for one derived from the disposition of vessels in the corolla.

80] Since my attention has been again turned to the subject, I have endeavoured to collect all that has been observed on the nerves or vessels of the corolla of Compositæ, a brief account of which may be not altogether without interest.

The earliest notice I have been able to find is contained in a passage (in page 170) of Grew's Anatomy of Plants, where, in speaking of syngenesious flosculi, he says, "they are frequently ridged, or as it were hem'd like the edge of a band." And his figure of a magnified floret of the common Marigold, in tab. 61, gives a tolerable idea of the marginal vessels of its laciniæ. Grew however takes no notice of the trunks from which these branches arise, either in his text or plates.

Van Berkhey, in his Dissertation on Compositæ, published at Leyden in 1760, though he makes no mention of the nerves of the corolla in his text, yet in all the magnified figures he has given both of ligulate and tubular florets, correctly represents the trunks of the primary vessels, without, however, noticing their ramification in the laciniæ. I am anticipated therefore by this author's figures exactly in the same degree as by the passage contained in M. Cassini's second memoir.

The accurate Schmidel, in the few Compositæ which occur in his Icones, has correctly represented the trunks of the primary vessels, but has equally omitted their ramifications.

In the Analysis Florum of Batsch, a work published in 1790, the object of which was to give an idea of the structure of the natural families of plants, by a minute description and magnified figures of one or more species selected from each, *Coreopsis tripteris* occurs; and although the vessels of its tubular floret are very indistinctly figured, yet both their trunks and branches are correctly described. The same author however, who in 1802 published an ingenious work on the natural families of [81 plants,[1] takes no notice of the vessels of the corolla in the character of Compositæ which he has there proposed.

In the figures of syngenesious plants given by Schkuhr,[2] wherever the ligulæ of *Cichoraceæ* are magnified, the trunks of the nerves are correctly represented ending in the sinuses; unless in one plate containing *Lactuca virosa* and *Sonchus sibiricus*, in both of which the vessels are made to pass through the axes of the teeth; but in no case are the marginal branches noticed. It is singular that this generally accurate author, in the many magnified figures he has given of tubular florets, has only in two cases represented the trunks of their vessels, namely in *Echinops Ritro*, where they are correctly placed, and in *Silphium trifoliatum*.

---

[1] Tabulæ affinitatum regni vegetabilis.

[2] In Botanisches Handbuch

where, though only five vessels are visible, they are erroneously made to pass through the axes of the laciniæ.

The only remaining author that notices these vessels is M. Mirbel, who in the second part of his valuable Elémens de Physiologie Végétale et de Botanique, published in 1815, introduces into his character of Compositæ the fact of the laciniæ of the corolla being furnished with marginal nerves. This observation, if not original, the author may have adopted either from my essay already quoted, of which he was in possession soon after its publication, or from M. Cassini's third memoir, which was read to the Institute of France six months after that essay appeared: but he could not have derived it from the passage in that author's second memoir, on which he rests his claim; no notice being there taken of the disposition of vessels in the laciniæ.

In M. Cassini's memoir expressly on the Corolla of Compositæ, which was read to the Institute of France in December 1814, and of which an abstract, by the author
82] himself, is given in a late number of the Nouveau Bulletin des Sciences, the disposition of vessels in the corolla is expressed in the following terms:

"Chacun des cinq pétales dont se compose la corolle est muni de deux nervures très simples qui le bordent d'un bout à l'autre des deux côtés, et confluent par conséquent au sommet."

On this statement I have several remarks to offer. And first, I object to its hypothetical language. Whatever opinion may be formed of the theory here adopted by the author, namely, that every monopetalous corolla is in reality composed of several confluent petals; a theory first proposed by Linnæus himself in his Prolepsis Plantarum, and ably supported on different grounds by Mons. Decandolle in his excellent Théorie Elémentaire de la Botanique; I can see no advantage in adopting its language in stating a fact of this kind, especially if proposed as a practical character.

For my own part, I consider this opinion as correct in the sense in which it was held by Linnæus, without, however, connecting with it the ingenious hypothesis of M. Decandolle, namely, that petals are only modified stamina. It remains to be seen on what ground M. Cassini has adopted this theory, as proposed by M. Decandolle, for Compositæ, the only family which seems to present a very important objection to it, in having its principal, and in the greater part of the order its only, vessels occupying the lines of junction of the supposed united petals.

To adapt this disposition of vessels to the theory, M. Cassini is obliged to subdivide their apparently simple trunks; a division, however, which may be regarded as entirely hypothetical. From the observations I have made on the subject, I have no doubt that these trunks are equally simple with the secondary nerves when present, or with the primary in other families. I find them to consist of two kinds of vessels, the spiral and ligneous. Of the spiral vessels there are generally several in the cord: in *Helianthus multiflorus*, however, I have not been able [83 to find more than one, either in the trunk of the nerve above the insertion of stamina, or in the branches of the laciniæ. It will be of some interest to verify this fact (which I by no means give with absolute confidence), both on account of the apparently formidable objection it presents to the theory in question, and also that, in following it up by an examination of the point of division, a clearer idea may be obtained of the ramification of spiral vessels than has hitherto been given.

My second objection to M. Cassini's account is, that he describes the nerves as marginal through their whole length. I have formerly, in the passage already quoted, stated them to be parallel and approximated to the margins of the laciniæ. Perhaps in no instance can the branches be considered as strictly marginal; in many cases they are manifestly distinct from the margins, and in the genus *Hymenopappus* are further removed from them than from the axis of the laciniæ. In *H. scabiosæus* there is also an evident inequality of the two branches in each lacinia, the stronger extending nearly to the apex, while the weaker either entirely disappears before it reaches the stronger, or unites with it considerably below its termination. In *H. tenuifolius* this irregularity is still greater; one branch being not unfrequently altogether wanting, and even the remaining branch considerably weakened: where this happens a secondary vessel is always produced, though very few flosculi are furnished with five complete middle nerves.

To the fact stated by M. Cassini that the lateral nerves are always simple, I have met with only one apparent exception, in an unpublished species of *Madia*, where they are connected by a few branches with the secondary or 84] middle nerve, which in this plant is more strongly marked than the primary, and from which indeed these connecting branches probably originate.

It must, I think, be admitted by M. Cassini, that in many genera of Compositæ five vessels passing through the axes of the segments exist, even ten others are occasionally found, as in *Helianthus*, though these can hardly be traced below the insertion of stamina. But as it has been already shown that the lateral or primary vessels are not strictly marginal through their whole length, and as one instance has been produced in which their branches, if not themselves subdivided, are at least connected by ramifications of the middle nerves,[1] it follows that a monopetalous corolla having in its tube fifteen nerves with distinct origins, three of which are continued through each of its segments, and unite together at the apex, would upon the whole better correspond with the definition M. Cassini has given of the Corolla of Compositæ, than the actual disposition of vessels in that order. Now such a structure exists in the whole of Goodenoviæ,[2] a family of plants very nearly related to Compositæ. It exists also in *Ernodea,* [85 in which the lateral nerves, though they give out externally a few branches, observe the same course, and terminate in the same manner in the laciniæ as those of Compositæ. A similar disposition is observable in certain genera of Solanaceæ, as *Datura* and *Cestrum,* though in these the lateral nerves are more ramified, and their trunks generally less distinct in the laciniæ. It appears therefore that, in adopting M. Cassini's theoretical expression for the vascular structure of the corolla of Compositæ, one pecu- [86 liarity actually existing is lost.[1]

---

[1] M. Cassini himself (in a note to his third memoir published in the Journal de Physique for February 1816, p. 129) has given another instance of the ramification of nerves in *Iva frutescens*.

[2] I have formerly observed (in Prodr. Flor. Nov. Holl. p. 580, and in General Remarks on the Botany of Terra Australis [*vol. i, p.* 33]) that *Euthales* and *Velleia*, genera belonging to *Goodenoviæ*, exhibit the remarkable and nearly peculiar character of a corolla having the lower part of the tube cohering with the ovarium, while the calyx is entirely distinct. I have at the same time remarked that, even in those genera of the same natural family in which the calyx is coherent, the tube of the corolla may be supposed to be continued down to the base of the ovarium; and that this becomes even evident in such species as have the

adhering part dilated into nectariferous processes; or in those where, the segments of the calyx not being closely approximated, the coloured corolla is visible in the interstices. In some species of *Goodenia,* particularly *G. decurrens* and *bellidifolia,* I find it practicable to separate not only the adhering calyx, but also the tube of the corolla from the ovarium. In the tube thus separated it appears that the lateral nerves, which preserve their parallelism to the middle nerve nearly to the base of the segment, become more evidently divergent below the point of adhesion, and in such a degree that the corresponding branches of the neighbouring segments unite with each other considerably above the middle of the tube, forming a common trunk, which is continued to the base of the ovarium; the five trunks thus formed uniting internally with those from which the filaments originate, and externally with the axes of the opposite segments of the calyx. The middle nerves of the segments of the corolla are in like manner continued below the point of cohesion to the real base of the tube.

The analogy of this disposition of vessels in the corolla of Goodenoviæ to that of Compositæ is obvious. To assimilate entirely the two structures, it is only necessary to suppose a deeper division of the five primary vessels of Compositæ, and a continuation of the tube of the corolla below its apparent base to that of the ovarium. That this is its real origin, is rendered not improbable both from the analogous structure now described in the family of *Goodenoviæ,* and from the manifestly hypogynous corolla of *Brunonia;* a genus in many respects still more nearly related to Compositæ, though differing in the disposition of the vessels of its corolla.

The more direct proof of this origin, derived from an examination of the surface itself, can hardly, perhaps, be expected where the parts are generally so small, and where, as I conceive, the surface of the pericarpium in many cases depends less on that of the cohering envelopes, than on the proper figure of the ovarium itself, as seems to be likewise the case in Umbellatæ.

There are however a few cases in which this opinion respecting the origin of corolla in Compositæ may derive some additional support from the appearance of the surface of the ovarium, as in *Marshallia* and *Hymenopappus,* in both of which genera, but particularly in the former, it is marked with ten longitudinal striæ, of which the five stronger are continued into the five nerves of the corolla, the remaining five ending abruptly at the apex of the ovarium.

[1] A still stronger objection to M. Cassini's definition is, that while its application to Compositæ is only hypothetical, it very nearly corresponds with the

The principal peculiarity, however, consists in the corolla of a syngenesious plant, when reduced to its smallest number of nerves, having these nerves alternating with its segments in the tube. I am acquainted with no instance of this order of reduction in the nerves of any other monopetalous corolla, but I observe an apparent tendency to it in *Portlandia* and *Catesbæa.* In the tube of the corolla of both these genera there are ten nerves, of which the five that alternate with the segments are manifestly stronger, and seem to furnish the greater part of the vascular system of the upper part of the tube and of the segments; the intermediate nerves being there somewhat like recurrent branches.

I shall conclude this subject by observing, that although the existence of nerves alternating with the segments of a monopetalous corolla, dividing below the sinus and uniting their branches at the apex of the segment, be rare, this disposition is comparatively frequent in a monophyllous calyx, especially where its æstivation is valvular. Labiatæ furnish the most striking examples of this structure. I am not however acquainted with any instance of a calyx having five nerves only, and those alternating with its segments.

The *æstivation* or condition of the corolla before expansion is the subject of my *second* remark on Compositæ. I 87] have, in the observations formerly quoted, stated this to be *valvular,* that is, having the margins of the segments applied to each other and dehiscing like the valves of a capsule. As I have remarked in the same place that this æstivation exists in several other families, it is rather surprising that M. Cassini, in the abstract of his third memoir given in the Nouveau Bulletin des Sciences for last October, should seem to consider this character as peculiar to

actual disposition of vessels in certain polypetalous genera. Thus in *Pittosporum revolutum,* each of the petals has three nerves with distinct origins. Of these the two lateral, evidently within the margins, less so, however, than in *Hymenopappus,* are quite simple in the ungues, and ramify more or less in the laminæ, near the top of which they unite with each other and with the middle nerve.

Compositæ.[1] It appears also that he is not aware of any exception to it in the class. I have however, in a different part of the same essay, noticed one exception existing in *Chuquiraga*, and I have since found another in *Corymbium*. In both these genera the æstivation is induplicate, that is, the margins of the segments are doubled in, so that in the unexpanded state none of them are visible. I have in the passage referred to observed that the valvular and induplicate [88 modes of æstivation easily pass into each other, merely by an addition or abstraction of the elevated margins of the laciniæ: instances of their abstraction, and of the consequent conversion of the induplicate into the valvular mode, occur in several Goodenoviæ, and in some Convolvulaceæ and Solanaceæ; while *Chuquiraga* and *Corymbium* are examples of their addition in an order where they are generally wanting.

My *third* remark is entirely borrowed from Schkuhr,[2] who states that in all *Cichoraceæ* or Ligulatæ the pollen is angular, and that in *Corymbiferæ* and *Carduaceæ,* or in all tubular florets, it is spherical or oval.

---

[1] Since this paper was read, M. Cassini has published his memoir (in the Journal de Physique for February 1816), in which he states the same æstivation to exist in certain other families, namely, Campanulaceæ, Lobeliaceæ, and Rubiaceæ. This observation, if applied to the whole of these families, as is evidently the author's intention, is correct only with respect to Campanulaceæ, from which I have separated Stylideæ as a distinct order, partly, as I have stated, on account of its imbricate æstivation. In a considerable part of the Lobeliaceæ of Jussieu, which includes my Goodenoviæ, the æstivation is not valvular but induplicate: and though in Rubiaceæ the valvular mode is very general, there are many remarkable exceptions to it, as *Gardenia, Ixora, Pavetta, Coffea,* and several other genera, where it is unilaterally and obliquely imbricate, as in most of the Apocineæ, with which Linnæus united them under the name of Contortæ, derived from this very circumstance. On this subject I may be allowed further to remark, that M. Cassini, who in the memoir now cited has repeatedly asserted his claim to the priority of the observation on the disposition of vessels in the corolla, has in treating of its æstivation omitted to notice what had been already published respecting it in my essay above quoted, where I conclude he must have seen my observation, as he refers to the sentence containing it. The æstivation of corolla in Compositæ is also noticed in the observations on *Brunonia,* contained in my Prodromus Floræ Novæ Hollandiæ, which I suppose he has not seen: I may therefore, for the general importance of æstivation of calyx and corolla in affording characters both for Orders and Genera, refer him to almost every page of the same work, and to its preface, for an observation on the degree of attention that had been previously paid to this point of structure, which will enable him to correct in some measure his own remark on the subject.

[2] Botanisches Handbuch 3, p. 8.

All the figures which this author has given of pollen in Cichoraceæ represent it as a regular icosahedron, except that of *Geropogon glabrum*, which is a dodecahedron. I believe neither of these forms of pollen has been observed in any other family of plants.

A *fourth* remark on Compositæ I do not offer with absolute confidence, as it is opposed to the statement of M. Cassini, on whose general accuracy I have great reliance. It relates to the disposition of the branches of the style or stigmata, which according to M. Cassini are lateral, or right and left with relation to the axis of the common receptacle; whereas, I consider them as anterior and posterior, though in many cases by a slight degree of twisting in the style they acquire what M. Cassini regards as their original position.

This may seem a point of very little consequence to establish. Independent however of the necessity of minute accuracy in every case, it appears to me to have some connexion with my *fifth* remark, which relates to the internal
89] structure of the Ovarium of Compositæ. I am not aware of anything having been yet said on this subject further than that it contains a single erect ovulum, inserted at the base of the cavity. In addition to this, I observe in the greater part of Compositæ, whose ovarium I have examined, two very slender filiform cords, which, originating from opposite points of the base of the ovulum, or of its short footstalk, run up, and are more or less connected with, the lateral parietes of the ovarium, until they unite at the top of its cavity, immediately under the style; between which and the ovulum a connexion is thus formed. In many cases, as in *Liatris spicata* and *Tussilago odorata,* these cords are easily separable from the ovarium, and have such a degree of tenacity that they may be extracted from it entire, along with the ovulum. In other cases they more firmly cohere with the sides of the cavity: and in those plants in which I have been unable to see them distinctly,

I conclude they are not absolutely wanting, but that their connexion with the parietes is still more intimate.

These cords may be supposed to consist either solely of the vessels through which the ovulum is fœcundated, or to contain also the remains or indications of a system of nourishing vessels, or chordæ pistillares, the position of which points out the true nature of the ovarium in this class, or the relation it has to the apparently less simple ovarium of other families. I am inclined to adopt the latter supposition. In order, however, to be understood on this subject, it is necessary to premise that I consider the pistillum or female organ of all phænogamous plants to be formed on the same plan, of which a polyspermous legumen or folliculus whose seeds are disposed in a double series may be taken as the type. A circular series of these pistilla, disposed round an imaginary axis, and whose number corresponds with that of the parts of the calyx [90
or corolla, enters into my notion of a flower complete in all its parts.

But from this type and number of pistilla many deviations take place, arising either from the abstraction of part of the complete series of organs, from their confluence, or from both these causes united; with consequent abortions and obliterations of parts in almost every degree. According to this hypothesis, the ovarium of a syngenesious plant is composed of two confluent ovaria; a structure which is in some degree indicated externally by the division of the style, and internally by the two cords which I consider as occupying the place of two parietal placentæ, each of these being made up of two confluent chordulæ, belonging to different parts of the compound organ. I am well aware how very paradoxical such an hypothesis must seem, especially when applied to a structure apparently so simple as that of the ovarium of Compositæ; and I therefore regret that I am not yet fully prepared to bring forward in its support a series of facts already in my possession, consisting of deviations from the usual structure of organs, and particularly of instances of stamina changed into pistilla.

In the mean time it may give some plausibility to the hypothesis to remark, that there are families of plants strictly natural in which a series of degradations exist, if I may so speak, from the assumed perfect pistillum, to a structure as simple as that of Compositæ.

Thus in *Proteaceæ* we have the type of the perfect pistillum in the many-seeded folliculus of *Embothrium;* the first degree of imperfection in that of *Grevillea,* where only one ovulum of each series remains; a further reduction in the indehiscent monospermous fruit of *Leucospermum,* in which the insertion of the ovulum is lateral; and the simplest 91] form in *Protea* itself, where the single ovulum is inserted at the base of the cavity. Proteaceæ, however, exhibit a series of obliterations in the parts of a single pistillum only. An illustration more in point, though somewhat less perfect as a series, may be taken from *Goodenoviæ,* an order of plants very nearly related to the class of which we are treating. In the greater part of *Goodenoviæ,* the ovarium is bilocular, each cell having an indefinite number of seeds; in the greater number of *Scævolæ,* each cell is reduced to a single ovulum; while in some species of the same genus, and in all the species of *Dampiera,* the ovarium, though retaining its external characters, is reduced to a single monospermous cell, with an erect ovulum, as in Compositæ. The natural order *Cruciferæ* exhibits also obliterations, more obviously analogous to those assumed as taking place in syngenesious plants; namely from a bilocular ovarium with two polyspermous parietal placentæ, which is the usual structure of the order, to that of *Isatis,* where a single ovulum is pendulous from the apex of the unilocular ovarium. And lastly in the genus *Bocconia,* in the original species of which (*B. frutescens*) the insertion of the single erect ovulum has the same relation to its parietal placentæ, as that of Compositæ has to its filiform cords, a second species (*B. cordata*) exists in which these placentæ are polyspermous.

My *sixth* observation on Compositæ regards the order in which the florets expand. To understand the relation this order has to that of other families, it may be necessary first to make a few remarks on the more usual modes of inflorescence.

It is well known that in an absolutely simple spike the expansion of the flowers is ascendent; that is, begins at the base of the spike and proceeds regularly upwards. To this order very few real exceptions occur, several of the apparent deviations being connected with some degree of composition in the spike.

It is also known that in a compound spike, while the [92 expansion of each partial spike is ascendent, that of the spikes, with relation to each other, is descendent; the terminal spike expanding first, and the others in a regular succession downwards. This order, indeed, admits of a greater number of exceptions than that of the simple spike; several of them apparently depending on the density or imperfect composition of the spike; and the more usual deviation consisting in the expansion beginning below the apex, and proceeding in opposite directions from the point of commencement; the upper portion following the order of the simple, the lower that of the compound spike.[1]

The simple racemus and corymbus are obviously very slight modifications of the spike, and in their expansion obey the same law.

A syngenesious compound flower, or *capitulum* as it may be termed, is merely a spike with a shortened and generally depressed axis. In cases where this capitulum is unquestionably simple, the expansion of its flowers is uniformly from circumference to centre, or in the order of the simple spike. Where the capitula are disposed in a corymbus, which is their usual mode of combination, the order of the compound spike is observed; their expansion with relation to each other being from centre to circumference. In their denser aggregations, whether forming a compound spike or head, the same order of expansion obtains, and it continues though the florets in each common calyx or involucrum should be lessened in number, or even reduced to unity, as in *Echinops* and *Rolandra.*

---

[1] The most remarkable exception to the order of the compound spike exists in the compound umbel of Umbelliferæ, of which the outer umbellulæ expand somewhat earlier than the central; and as this order of expansion seems to extend through the whole natural family, *Astrantia*, in which the terminating umbel expands much earlier than those of the lateral branches, cannot be considered as having a compound umbel.

98] The absolute constancy in the order of expansion of the simple capitulum from circumference to centre, and the more or less complete inversion of this order in the compound capitulum, appear to afford tests of the real structure in certain cases where the degree of composition, and consequently the proper names of some of the parts, might otherwise be doubtful.

To illustrate this I select two genera, *Lagasca* and *Cæsulia.*

In *Lagasca* the capitulum, both from its form and the appearance of its involucrum, might at first sight be considered as simple: on examination, however, it is found to differ from all simple capitula, in each floret being furnished with a tubular envelope, exactly resembling a five-toothed perianthium, but which does not in any state cohere with the included ovarium.

Cavanilles, by whom the genus was established, regarded this envelope as a genuine perianthium, and erroneously described its tube as cohering with the ovarium; an error which is copied in Persoon's Synopsis Plantarum, where the genus is consequently placed in Polygamia æqualis. Jacquin, who has published *Lagasca* under the name of *Noccæa mollis,*[1] also describes the envelope of each flower as a proper perianthium, although aware of its tube being distinct from the ovarium. Subsequent writers have, indeed, more correctly referred the genus to Polygamia segregata; but the terms involucellum and calyculus, which they apply to the envelope in question, appear to me objectionable, for a reason that will presently be given.

Three suppositions may be formed respecting the nature of this envelope, namely, either that it is an involucrum reduced, as in *Echinops,* to a single flower; secondly, that it is a proper perianthium, which in appearance it very much resembles; or thirdly, that it is more analogous to [94 the outer calyx of *Scabiosa*, which M. Cassini seems to consider different in its nature from both these parts.

---

[1] Fragm. Bot. p. 58, tab. 85.

But the order of expansion in *Lagasca*, which is, though with some degree of irregularity, from centre to circumference, or that of the compound capitulum, seems to decide the question respecting the envelope of each flower, and to establish its identity with involucrum: nor does this involucrum differ materially from that of *Echinops*, except in the reduced number and confluence of its component parts.

The real structure of *Cæsulia* is perhaps less obvious.

This genus, which was first published by Dr. Roxburgh,[1] is referred by him to Polygamia segregata; the tubular envelope or involucrum of each floret being described as distinct from the included ovarium.

Kœnig, on the other hand, by whom the genus was discovered, and whose account of it is given in the same work, describes the partial involucrum of Roxburgh as the surface of the ovarium itself; its segments being, according to him, a pappus of two leaves. And lastly, Willdenow, regarding this involucrum as merely paleæ of the receptacle, refers the genus to Polygamia æqualis; in which order it is continued, both in Persoon's Synopsis, and in the second edition of Mr. Aiton's Hortus Kewensis.

This last view of the structure seems the most erroneous of any, and was probably adopted by Willdenow, in consequence of his having added to the genus a second species not really belonging to it, and which I shall have occasion to notice in another part of my subject.

An examination of the parts of fructification in different stages reconciles the opposite statements of Kœnig and [95 Roxburgh; for I find that at the time of flowering the envelope of each floret is, as Roxburgh has figured it, distinct from the ovarium, with which, however, in a more advanced stage its tube becomes firmly united; a fact that sufficiently accounts for Kœnig's description.

---

[1] In Corom. Plants, i, p. 64, t. 93.

There is here, therefore, a nearer approach to a true perianthium than in the involucrum of *Lagasca;* but the expansion of the flowers being, as in that genus, from centre to circumference of the capitulum, I consider the envelope of *Cæsulia* as unquestionably an involucrum, and the genus consequently belonging to Polygamia segregata.

I may here remark, that the name Polygamia segregata, invented by Linnæus for those genera of Compositæ with densely aggregate capitula, is calculated to give an erroneous idea of the nature of the structure; the opposite term Polygamia congregata being, according to the view now taken, obviously more proper for those genera, at least, whose involucra contain several flowers. It is not unlikely, indeed, that Linnæus himself was aware of the true nature of the inflorescence of these genera; but the term Polygamia congregata would not have suited the artificial arrangement which he adopted in his subdivisions of the class, nor his including in it the order *Monogamia;* for with this order the single-flowered genera of Polygamia segregata must then have been confounded.

It is a curious circumstance, that the order of expansion in Compositæ does not depend on the number of flowers actually existing, but on the effort, if I may so term it, made to produce them, manifested by the presence of an involucrum or common calyx, which is in some cases reduced to a single flower. The fact at the same time contributes to prove, that the whole natural class is formed on
96] that plan of dense aggregation of flowers, for which I have already attempted to show that certain parts of the structure of a syngenesious floret are peculiarly well adapted.

The circumstance, however, is not confined to Compositæ, but exists in an equally remarkable degree in *Gramineæ.*

I have formerly[1] considered the gluma, or what Linnæus has termed calyx, in this family of plants, as an involucrum.

In those genera where this gluma or involucrum contains several flowers their expansion is generally ascendent, or in the order of the simple spike. In a spike formed by these many-flowered glumæ, as that of *Triticum* and *Lolium*, the expansion of the partial spikes, with relation to each other, is descendent, or in the order of the compound spike; in most cases, however, with that deviation, which I have already noticed, of the expansion commencing below the apex and proceeding in opposite directions. But as the same descendent expansion takes place in a spike formed of single-flowered glumæ, it may be inferred that the genuine type or most perfect form of a grass is to have several flowers in its gluma or involucrum: a view not only consistent with the fact of a great majority of the order having actually this disposition; but also with that peculiarity in the vascular structure of the inner valve of the perianthium; which, whether it be considered as indicating that this part is formed of two confluent valves, an opinion I have elsewhere[1] advanced, or merely as a transposition of vessels in a simple valve, analogous to that in the syngenesious floret, is evidently adapted to the many-flowered spicula, though equally existing in that with a single flower.

---

[1] [*Vol. i, p.* 55.]

The resemblance between the outer calyx of *Dipsaceæ* and the single-flowered involucrum of Compositæ is so striking, that it cannot appear very paradoxical to consider them as both of the same nature. [97

In Dipsaceæ, however, there is no instance of the outer calyx containing more than one flower, and the evidence afforded by inflorescence on this subject is not altogether satisfactory.

In *Dipsacus* it has been long noticed that expansion begins about the middle of the spike, and proceeds in opposite directions from the point of commencement: this order is evidently more analogous to that of the compound than of the simple spike; there being several instances of spikes manifestly compound, where the same inversion of the upper part exists.

---

[1] In General Remarks on the Botany of New Holland [*vol. i, p.* 55].

But a fact, which I do not find any where observed, respecting the inflorescence of certain species of *Scabiosa,* particularly *succisa* and *atropurpurea,* is not so easily reconcilable with the compound spike: in these, and I have reason to think in many other species of the genus, the expansion begins simultaneously at the base and middle of the capitulum, proceeding regularly upwards from both points. Were this the case in all Scabiosæ, the compound nature of the spike in Dipsaceæ, although by no means proved, might be considered not improbable: there are, however, several species of the genus in which the order of expansion is altogether that of the simple spike.

Connected with the subject of inflorescence, I may remark that priority of development, whether among similar parts in the same flower or the different flowers of the same spike, is generally accompanied with greater perfection of these parts or flowers, and apparently with greater power of resisting the ordinary causes of abortion or obliteration.

I have formerly[1] observed respecting several natural families of plants, in which the stamina are in a 98] determinate number, but a number subject to reduction, that this reduction, where the flower is of a regular form, takes place in the same order in each natural family. Thus in *Junceæ,* which are generally hexandrous, the triandrous species have their stamina constantly placed opposite to the three outer leaves of the perianthium, while in Restiaceæ, Asphodeleæ, and I believe in a great part of the regular-flowered Liliaceæ, in certain species of which a similar reduction occurs, the stamina in the triandrous species are placed opposite to the inner leaves or segments of the perianthium. But in both cases the greater perfection of those stamina that exist in genera or species reduced to the smallest number, is indicated, where there is no reduction, by the earlier bursting of their antheræ; so that from this circumstance the order of reduction or abortion of stamina in any natural family may with some confidence be predicted by an examination of those genera where the number is complete.

---

[1] In Prodr. Flor. Nov. Holl. vol. i, and Appendix to Flinders's Voyage to Terra Australis [*vol. i, p.* 52].

Wherever the separation of sexes takes place, it may be assumed that the female flower is the more perfect production. And if this be admitted, where both sexes exist in the same simple spike the female should be found at its base, or where expansion commences, which is almost uniformly the case. For the same reason, in the trifid or trichotomous inflorescence, the female should be placed in the centre, which is also generally the fact.[1]

This connexion between præcocity and perfection of development is even more constant than the order of expansion in certain forms of inflorescence; as it is found to extend to several of the exceptions to this order.

Thus in the apparently simple spike of *Poterium*, where the order of expansion is descendent, the female flowers occupy the upper part of the spike; and this relation also [99 exists in the more compound inflorescence of *Ricinus*, *Siphonia*, and *Celtis*, in which the order of expansion is equally inverted.

It may seem rather paradoxical to select *Euphorbia* as an example of the same relation; this genus being considered by Linnæus, and the greater part of the botanists who have adopted his system, as having a dodecandrous hermaphrodite flower. We have already, however, I believe, sufficient evidence that this supposed hermaphrodite flower is in reality formed of several monandrous male flowers surrounding a single female.[2]

[1] To this order the most remarkable exception occurs in *Begonia*, in which the male flowers are central, and expand long before the lateral female flowers.

[2] To the arguments I have adduced (in my Remarks on the Botany of New Holland [*vol. i, p.* 28]) in support of this opinion, I am now enabled to add the more direct proof derived from certain species of *Euphorbia* itself, in which the female flower is furnished with a manifest calyx. I have formerly observed, that in a few cases the footstalk of the ovarium is dilated and obscurely lobed at top; but in the species now referred to it terminates in three distinct and equal lobes of considerable length, and which being regularly opposite to the cells of the capsule may be compared to the three outer foliola of the perianthium of *Phyllanthus*, between which and the cells of the capsule the same relation exists. This calyx is most remarkable in an undescribed species of *Euphorbia* from the coast of Patagonia, in the Herbarium of Sir Joseph Banks; but it is observable, though less distinct, in *E. punicea* and several other species.

In conformity with this view of its composition, and with the relation above attempted to be established, the development of the pistillum precedes that of the stamina in many species of the genus.

It is more difficult to determine whether this order of expansion and relative position of sexes in *Euphorbia* be in conformity with the general rule, or an exception to it. For its fasciculus of flowers may be considered as analogous either to the simple spike, and consequently having an inverted order of expansion, as in *Allium descendens*, and certain species of *Grevillea* and *Anadenia*: or it may be assimilated to the compound spike, as in several species of the genus the male flowers appear to be separated into 100] fasciculi; and according to this view the order of expansion is direct, the central female flower being the representative of the terminal partial spike.

There is even a third species of inflorescence with which the fasciculus of *Euphorbia* may be compared, namely, that consisting of one or more verticilli with a single flower in the centre. In this, which may be considered a modification of the spike or umbel, the usual order of expansion seems to be from centre to circumference. Its simplest form occurs in an unpublished New Holland genus of the same natural family with *Euphorbia*, in which a single verticillus of male flowers surrounds the central female flower. *Lambertia* may be considered as another instance of the same mode, and as far as can be determined, in a case where the flowers are hermaphrodite and their expansion nearly synchronous, following the same order. In all the known species of this genus the leaves are verticillate, and uniformly in threes: in *L. formosa* and *inermis* the involucrum constantly contains seven flowers, while in *L. uniflora* it is reduced to one flower. The seven flowers of the two former species I consider as made up of two verticilli, in number of flowers corresponding with that of the leaves, and of a single central or terminal flower; to which terminal flower *L. uniflora* appears to be reduced. From this order of reduction it may be assumed as more probable that species of *Lambertia* should be found with ten or four flowers in the involucrum than with nine, six, or three. But greater permanence being, as has been already remarked, generally connected with greater perfection, it becomes also probable that, if any species of this genus should be discovered with androgynous capitula, the female flower will occupy the centre as in the genus of Euphorbiaceæ above referred to.

It is worthy of remark, and may indeed appear in some degree at variance with the foregoing observations, that [101 although in an assemblage of flowers priority of expansion generally indicates a greater degree of perfection, and consequently a more ready convertibility of the hermaphrodite into the female flower; yet in a hermaphrodite flower the development of stamina usually precedes that of pistilla. The most remarkable exceptions to this order of development which I at present remember, occur in several species of *Plantago*, where the stigmata are fully developed, and often even withered, before the bursting of the antheræ.

I now proceed to make some remarks on certain genera of Compositæ which either occur under different names in late systematic works, or whose structure and limits seem to be imperfectly understood.

SOLIVA

was established in the Prodromus Floræ Peruvianæ et Chilensis, and is adopted by Persoon in his Synopsis Plantarum.

To this genus *Hippia minuta* of the Linnean Herbarium unquestionably belongs, and it is perhaps not specifically distinct from *Soliva pedicellata.* But on comparing the structure of this plant with the figures and descriptions, given by Mons. de Jussieu (in the fourth volume of the Annales du Muséum,) of the different species of his *Gymnostyles*, it appears to me evident that the whole of this genus is referable to *Soliva*, whose principal characters would consist in the want of corolla or perhaps its accretion with the persistent style in the female florets; in the pericarpia being more or less winged, and presenting their disk instead of their margins to the centre of the capitulum.

102] Sir James Smith has already pointed out the error M. de Jussieu has been led into in referring *Hippia minuta* Linn. to his *Gymnostyles nasturtiifolia*, a plant much more nearly related to *Hippia stolonifera* of Brotero; which, from repeated examination, I can with confidence refer to the same genus.

Gymnostyles anthemifolia is stated by M. de Jussieu to be a native of New South Wales: but as I have observed it only in cultivated ground in the neighbourhood of Sydney, and as it has certainly been found in South America, of which four other species of the genus are unquestionably natives, it has probably been imported into New South Wales, perhaps from Brazil; nor is it altogether improbable that *Hippia stolonifera* of Brotero may have been introduced into Portugal from the same quarter.

Grindelia,

described by Willdenow in the Transactions of the Natural History Society of Berlin for 1807, and subsequently in his Enumeratio Plantarum Horti Berolinensis, flowered in Kew Gardens for the first time in 1815, when I had an opportunity of examining it, and of determining its very near affinity with *Donia*, a genus proposed in the second edition of Hortus Kewensis, and adopted by Mr. Pursh in his Flora of North America: the principal distinction between these two genera consisting in a difference in the number of radii of the pappus, which in *Grindelia* is described by Willdenow as of two rays, and according to my observations has more frequently one only. But as even in *Donia* the number of rays, though indefinite, is variable, and the structure of the pappus is very nearly similar in both genera, which in all other respects agree, it may be perhaps expedient to unite them under the name of *Grindelia*, which was first in order of publication.

TRIDAX [103

was first established by Linnæus, in Hortus Cliffortianus, from a specimen found at Vera Cruz by Houston, and sent to Clifford by Miller. As Linnæus had no specimen in his own collection, that in Clifford's Herbarium, now in the possession of Sir Joseph Banks, is the only authority for the genus; and on examining this specimen I find the pappus to be not setaceous, as Linnæus has described it, but distinctly plumose. There is, therefore, no difference whatever between *Tridax* and *Balbisia* of Willdenow; and on comparing *Tridax procumbens* with *Balbisia elongata*, I cannot satisfy myself that they are even specifically distinct.

ANGIANTHUS.

Angianthus tomentosus of Wendland's Collectio Plantarum, (vol. ii, p. 32, tab. 48,) published in 1809, is evidently the same plant as my *Cassinia aurea*, described in the fifth volume of the second edition of Hortus Kewensis, which did not appear till 1813. Wendland neither mentions the native country of his *Angianthus*, nor from whence he received it. He must, no doubt, however, have obtained it from Kew Garden, where it was introduced and flowered from seeds which I collected in 1802, in the island of St. Francis, on the South coast of New Holland.

MEYERA.

This genus, described by Schreber in his edition of the Genera Plantarum, is not adopted by Willdenow. Swartz, however, in his Flora Indiæ Occidentalis, has referred to it, and I have no doubt correctly, *Eclipta sessilis* of his Prodromus. On comparing this species of *Meyera* with a plant in Sir Joseph Banks's Herbarium, collected in Peru

104] by Dombey, and which exactly agrees with *Sobreya* of the Flora Peruviana, it appears evident that this genus is reducible to *Meyera*. *Enhydra* of Loureiro's Flora Cochinchinensis, though described somewhat differently, and referred to Polygamia segregata, I have little doubt, belongs to the same genus; as does unquestionably *Hingstha* of Roxburgh's unpublished Flora Indica, where it is also referred to Polygamia segregata. This plant, which I have examined, is scarcely distinct from a species of *Meyera* that grows in New South Wales.

Cryphiospermum of Mons. de Beauvois's interesting Flore d'Oware et Benin, although reduced by him to Cichoraceæ, I have but little hesitation in referring also to *Meyera*. And lastly, *Cæsulia radicans* of Willdenow, likewise a native of æquinoctial Africa, is perhaps not specifically different from *Cryphiospermum repens* of Mons. de Beauvois.

MELAMPODIUM

was established by Linnæus, in the first edition of Genera Plantarum and in Hortus Cliffortianus, from a specimen found by Houston near Vera Cruz, and communicated by Miller to Clifford, in whose Herbarium, now forming part of the collection of Sir Joseph Banks, it still exists. It does not appear that this plant has been found by any other botanist than Houston; and according to the character given by Linnæus of *Melampodium*, it must be considered the only species of the genus.

In the second edition of Species Plantarum he added to it, but with a doubt, *Melampodium australe*, a plant adopted from Lœfling, according to whose description the pappus and surface of the seed are widely different from those of the original species. Swartz has referred to the genus a third species, *M. humile*, entirely distinct in these respects from both the former; and more recently a fourth species, *M. longifolium*, with seeds differently modified from all the others, has been annexed to it.

105] But if these four plants, so extremely different from each other in pappus and form of the pericarpium, really belong to the same genus, as their habit seems strongly to indicate, there can be no reason to separate from them *Alcina* of Cavanilles, erroneously considered by Willdenow as a species of *Wedelia:* and *Dysodium* of Richard, published in Persoon's Synopsis, though differing from all the others in the form of its pericarpium and in that of its receptacle, must also be reduced to this genus. If, however, the part described by Linnæus as pappus in *Melampodium americanum* be really such, and if the pericarpium itself vary so widely both in form and surface, it would be inconsistent with the principles of division generally adopted in Compositæ, to unite all these plants into one genus, notwithstanding their great resemblance in habit as well as in the other parts of fructification; and it would be at least in vain to look for any combining character in this part of their structure.

A careful examination of the female flowers, especially in an early stage, removes this difficulty, by proving that the supposed external coat of the ovarium, with its various inequalities of surface, some of which have been described as pappus, is in reality an involute bractea or foliolum of the involucrum, like that of *Micropus*, completely inclosing the ovarium, but from which in several species of the genus it is entirely, and in others in great part, distinct.

CRASPEDIA

first appears in Forster's Prodromus Florulæ Insularum Australium, where an essential generic character is given, but no description of the species. The genus is adopted and the character received without remark by Willdenow in his edition of Species Plantarum, and by Persoon in his Synopsis. Among George Forster's drawings of subjects of natural history made in Cook's second voyage, and [106 now in the library of Sir Joseph Banks, there is a figure of this plant, from which it appears that he originally referred it to *Stæhelina;* a proof that he had not at that time very carefully examined it. It is not improbable therefore that he afterwards proposed it as a distinct genus, belonging to

Polygamia segregata, from finding that this had been already done by Solander, whose name (*Cartodium*), however, he did not think it necessary to adopt, and with whose generic character he probably was not acquainted. In his own he very erroneously states that there is no partial involucrum, and hence perhaps M. Labillardière entirely overlooked *Craspedia* when he established his *Richea* from a nearly related species of the same genus. That such is the case I have long since briefly noticed,[1] and have ascertained by a comparison of the specimen of *Craspedia uniflora* in George Forster's Herbarium with *Richea glauca* of Labillardière, and other species of the same genus which I have observed in New Holland.

M. Labillardière's character of *Richea* is essentially correct. It is well to remark, however, that his general involucrum is formed of the bracteæ subtending and in equal number with the outer partial capitula; and that the general receptacle has no other paleæ than the analogous bracteæ of the inner capitula. It is the more necessary to take this view of the structure, as I have found in New Holland a nearly related genus (*Calocephalus*), which differs from *Craspedia* and *Richea* in the want of these bracteæ, as well as in the partial receptacles being without paleæ, and in the rays of the pappus being plumose only in the upper part. I have also another genus of this tribe (*Leucophyta*) from the same country, differing from *Calocephalus* in having a general involucrum consisting of a few short bracteæ, in the squamæ of its partial involucra being 107] concave and bearded at top, and in the rays of its pappus being plumose through their whole length, as in *Craspedia*, from which it is distinguished by the want of paleæ on the partial receptacles, and very remarkably in habit.

I have selected the foregoing genera as having been either published under different names, or, as it appears to me, unnecessarily subdivided. In this extensive class it would not be difficult to point out a much greater number consisting of species improperly united. One very remarkable case of this kind is the genus

---

[1] In Prodr. Flor. Nov. Holl. p. 555.

CALEA,

to which, as I intend to enter fully into the history and affinities of its species, I shall confine myself.

This genus was established by Linnæus in the sixth edition of his Genera Plantarum, where the natural character is given: but the following essential character, which is still retained, appears for the first time in the twelfth edition of Systema Naturæ, in the third section of Polygamia æqualis:

"*Receptaculum* paleaceum, *Pappus* pilosus, *Calyx* imbricatus."

The species originally referred to *Calea*, in the second edition of Species Plantarum, are *C. jamaicensis*, *oppositifolia*, and *Amellus*, described from specimens in Browne's Jamaica Herbarium, which he had received a few years before, and incorporated with his own.

These three plants Linnæus had originally referred to *Santolina*,[1] for which it seems to me rather less difficult to account than for his afterwards uniting them together to form his genus *Calea;* two of them, according to his descriptions,[2] though in reality one only, being without pappus, and in other respects corresponding with the generic character of *Santolina;* and the third, which Browne had [108 doubtfully referred to the same genus, though furnished with pappus, agreeing with the others in having opposite leaves.

But the difference in habit between all these plants and the original species of *Santolina* is so great, that it probably afterwards determined Linnæus to remove them from that genus; and although he found a sufficient generic character in the pappus of *Calea jamaicensis* only, he united with it the two other species, for a reason perhaps similar to what I have supposed led him to separate all the three from *Santolina*. It is remarkable, however, that not one of these three original species of *Calea* corresponds with his character of the genus; and that they in reality belong to three very distinct genera, on principles which, I conceive, Linnæus himself would have admitted.

---

[1] In Amœnit. Acad. vol. v, p. 404.

[2] *Loc. cit.*

The *first* species, *Calea jamaicensis*, is the only one that even seems to agree with the generic character, in having pappus which at first sight (to the naked eye at least) might appear simply capillary, but which on a closer examination proves to be of a very different and nearly peculiar structure. Of this species I have seen only one authentic specimen, received from Browne by Ehret, and now in Sir Joseph Banks's Herbarium. The specimen in question, though incomplete, evidently belongs to the same species with "Conyza fruticosa cisti odore, floribus pallide purpureis, summitatibus ramulorum insidentibus," of Sloane,[1] of which I have examined the original very perfect specimens in his Herbarium, preserved in the British Museum,[2] and am satisfied that its pappus is of the same structure as that of *Calea cordifolia* of Swartz, who has well described it, but who has at the same time given a different
109] account of that of *C. jamaicensis*.[3] These two plants are the only published species of this genus, for which the name of *Calea* should be retained, and which may be distinguished by the following characters:

CALEA.

Caleæ species *Linnæi*.

Involucrum[4] imbricatum. *Receptaculum* paleaceum. *Flosculi* tubulosi, uniformes, hermaphroditi. *Antheræ* basi muticæ. *Stigmata* acuta. *Pappus* paleaceus: radiis uninerviis, pinnatifido-striatis.

---

[1] Hist. Jam. i, p. 257, tab. 151, fig. 3.
[2] Herb. vol. v, fol. 14 and 15.
[3] In Flor. Ind. Occid. vol. iii, p. 1328.
[4] Calyx communis *Linnæi*.

Frutices (Americæ æquinoctialis,) *pubescentes, scabri.* Folia *opposita, indivisa.* Capitula[1] *corymbosa, v. terminalia, v. axillaria.* Involucri *subovati foliola nervosa, obtusa.* Paleæ *receptaculi convexi distinctæ, figura et textura fere involucri.* Corollæ *luteo-purpureæ* (Swartz), *glabræ, laciniis dinerviis.* Achenium *subcylindraceum v. obsolete angulatum, glabrum v. pubescens, callo baseos subobliquo.* Pappus *persistens albus, nitens; radiis simplici serie subulatis, indivisis, superne denticulatis.*

Obs. In Sir Joseph Banks's Herbarium there are two plants very nearly related to *Calea,* differing from it merely in having a radius of ligular female florets. If this difference be considered sufficient to constitute a genus, it may be named *Caleacte.* The first of these plants (*C. urticifolia*), with nearly ovate-acute crenated leaves, found by Houston near Vera Cruz, is *Solidago urticæfolia* of Miller, by whom it appears to have been cultivated. The second, with deeply lobed or pinnatifid leaves (*C. pinnatifida*), was lately sent from Brazil by Mr. Sellow.

The *second* Linnean species, *Calea oppositifolia,* has very little affinity to the first. In attending merely to the technical character of *Santolina,* it might be referred to that genus; but it differs so widely, both in other points of [110 structure and in habit, that there can be no question of the propriety of separating it, which may be done by the following character, and under the name of

Isocarpha.

Receptaculum conicum: *paleis* distinctis, conformibus: extimis *involucrum* constituentibus. *Flosculi* tubulosi, uniformes, hermaphroditi. *Antheræ* basi muticæ. *Stigmata* appendice elongato, hispidulo, acuto. *Achenium* prismaticum: *pappo* nullo.

Herbæ (Americæ æquinoctialis). Folia *opposita* (vel

---

[1] Corolla communis, *Linn.*

alterna) *indivisa.* Capitula *ovata, terminalia, terna* (*vel solitaria*). Paleæ *lanceolatæ.* Corollæ *albidæ.* Antheræ *basi truncatæ.*

Obs. I have so constructed the generic character of *Isocarpha* as to include *Spilanthus atriplicifolius* of Linnæus, which, however, differs very remarkably from *Calea oppositifolia* in having alternate leaves and solitary capitula, as well as in the texture and form of its paleæ.

The pappus, consisting of three or four very minute aristæ, described by Swartz[1] in *Calea oppositifolia,* I have not been able to observe in any of the specimens that I have examined.

The *third* species, *Calea Amellus,* is probably the same plant as *Bidens scandens,* which Linnæus described in Hortus Cliffortianus, but, having no specimen in his own collection, appears to have forgotten. The original specimen in Clifford's Herbarium, now in the possession of Sir Joseph Banks, evidently belongs to the same species, and perhaps to the same individual, with a specimen in Miller's collection, which Mr. Dryander compared, and considered to agree with *Calea Amellus* of the Linnean Herbarium. The true synonym, therefore, of *Calea Amellus* is "*Bidens* iii suffruticosus vimineus, foliis oblongo-ovatis oppositis, floribus comosis" of Browne;[2] while Linnæus has quoted and even derived his specific name from the same author's "*Amellus* ramosus, foliis remotis terminalibus, fulcris longis divaricatis;"[3] which, instead of belonging to *Bidens scandens,* I believe, for the following reasons, to be *Bidens nivea.* 1st, The figure in Burmann's Thesaurus Zeylanicus,[4] quoted by Browne for his plant, though belonging to *Lavenia erecta,* is at the same time a good representation of *Bidens nivea,* and very unlike *Bidens scandens.* 2dly, Browne's description in most respects very well agrees with the former species, but certainly not with *Bidens scandens*. And 3dly, I infer that *Bidens nivea* was actually in Browne's Herbarium, from finding it in the Flora Jamaicensis published in the 5th volume of Amœnitates Academicæ, and formed chiefly from that Herbarium; though a very erroneous reference for this species is there made to Browne's first *Santolina*, which, from the description, cannot possibly belong to *Bidens nivea*, but is probably *Verbesina gigantea*.

---

[1] In Obs. Bot. p. 302.

[2] Browne, Jam. 317.

[3] *l. c.*

[4] Eupatoriophalacrum scrophulariæ aquaticæ foliis oppositis, *Burm. Thesaur. Zeyl.* p. 95, t. 42.

M. Decandolle has lately established a new genus, *Salmea*, consisting of *Bidens scandens*, *Bidens hirsuta*, and a third species which I have not examined. These plants are very properly separated from *Bidens* by this excellent botanist, and well distinguished both from that genus and from *Melananthera*. It is rather remarkable, however, that he has not thought it necessary to compare *Salmea* with *Spilanthus*, from which, according to his description, it differs only in its imbricate involucrum. But as in *Spilanthus* the foliola of the involucrum are not exactly equal, and are disposed at least in a double series, I have introduced some additional distinctions into the following character of [112

SALMEA.

Decandolle in Cat. Hort. Monspel. p. 140.

Involucrum imbricatum. *Receptaculum* conicum, *paleis* persistentibus. *Flosculi* tubulosi, uniformes, hermaphroditi (5-fidi). *Antheræ* sagittatæ. *Achenium* verticaliter compressum, bi-aristatum; *aristis* persistentibus (apteris v. alatis).

Frutices (Americæ æquinoctialis) *sæpius decumbentes*. Folia *opposita, indivisa*. Inflorescentia *terminalis, subpaniculata, vel corymbosa*. Corollæ *albidæ*. Paleæ *receptaculi post lapsum pericarpiorum persistentes*.

OBS. Of this genus I have examined specimens of three species in Sir Joseph Banks's Herbarium, differing from each other in several very remarkable characters.

1. *Salmea scandens*, (Decand. l. c.) in which the aristæ are equal and without any membranaceous border: stigmata remarkably dilated, tongue-shaped, obtuse, not hispid, obscurely papulose, and apparently without any terminal appendix: style dilated at the base into a hemispherical bulb which is truncated underneath.

2. *Salmea hirsuta*, (Decand. l. c.) whose aristæ are unequal; the inner, which is the larger, being furnished with an evident ala; the outer having a narrow margin only: stigmata sharp and spreading: style dilated into an ovate bulb which has an attenuated base.

3. *Salmea? curviflora* (nob.) differs from both the preceding in the tube of its corolla being remarkably bent outwards. In place of the inner arista there is a broad obtuse wing, of which the inner margin is straight and thickened, the outer continued down nearly to the base of 113] the pericarpium: the outer arista is winged: and besides these, one or two minute processes are generally observable. Stigmata revolute.[1]

---

[1] In the remarkable character of its re-curved florets, as well as in some other respects, this species of *Salmea* agrees with *Spilanthus arboreus* of George Forster (in Commentat. Gotting. ix, p. 66), of which he originally formed his genus *Laxmannia;* from a very erroneous view of its structure, however, having described the Nectarium or glandula epigyna as a "germen superum;" the real, though imperfect, germen with its two aristæ as a "perianthium bidentatum," and consequently referring the genus to Polygamia segregata.

When he afterwards corrected these errors, and reduced *Laxmannia to Spilanthus,* he did not discover that he had only the imperfect hermaphrodite or male plant before him.

That *Spilanthus arboreus* is really diœcious, I have ascertained from the examination of numerous specimens collected by Sir Joseph Banks in the Island of St. Helena, where it forms a small tree called by the inhabitants White-wood. It is *Bidens arborea* and perhaps also *Spilanthus tetrandrus* of Dr. Roxburgh's List of Plants appended to General Beatson's Tracts on St. Helena; the former being probably the female, the latter a starved variety of the male plant.

In re-establishing *Spilanthus arboreus* as a genus, sufficiently distinct from *Bidens*, *Spilanthus*, and *Salmea*, it will not, I conclude, be considered expedient to recur to Forster's name *Laxmannia*, which as far as relates to this plant is connected only with a series of blunders, was abandoned by the author himself, and has since been applied to another genus already generally adopted. It may be distinguished by the following character, and named

Petrobium.

Involucrum polyphyllum subduplici serie: exteriore breviore, foliolis paucioribus. *Receptaculum* paleaceum, planiusculum. *Flosculi* dioici, tubulosi, In the 12th edition of Systema Naturæ, Linnæus added to his genus *Calea* a *fourth* species, namely *Calea scoparia ;* for what reason it would be difficult to discover, as it does not resemble, either in its fructification or habit, [114 any of the three genera of which, as has been shown, *Calea* was originally composed. This fourth species, which he had at first referred to *Chrysocoma,*[1] is now known to be diœcious;—Browne, by whom it was first described and figured, and one of whose specimens I have examined, Linnæus, and even Swartz when he published his Observationes Botanicæ, being acquainted with the male plant only; which, however, all of them considered hermaphrodite: nor is there any reason to doubt that Gærtner's genus *Sergilus* is also the male of this species; although he has ventured to describe the colour of the embryo, deceived, probably, by the size of the imperfect ovarium, and the colour of its inner surface.

Professor Swartz has since given a more satisfactory account of *Calea scoparia,* and has referred it to *Baccharis ;*[2] to which genus as Richard[3] and Jussieu[4] have proposed to limit it, namely to the diœcious species of America, it unquestionably belongs. This limitation of *Baccharis* it may, upon the whole, be expedient to adopt; by doing so, however, a name of Dioscorides is applied to a genus of plants found only in the new continent; while, notwithstanding the contrary opinion is expressed by M. de Jussieu,[5] sufficient distinctions exist between those species

---

4-fidi: *Masculi:* Antheris exsertis; Stigmatibus acutis hispidulis: *Feminei:* Staminibus sterilibus; Stigmatibus acutis recurvis. *Achenium* v. parallelo-compressum v. angulatum; angulis (2-3) aristatis: *aristis* persistentibus, antrorsum denticulatis.

Arbor (Insulæ Stæ Helenæ). Folia *opposita, indivisa.* Panicula *terminalis, brachiata.* Involucrum *oblongum.* Paleæ receptaculi *squamis involucri subsimiles.* Corollulæ *ochroleucæ, tubo arcuato-recurvo* (*ut capitulum primo intuitu radiatum videatur*). Mas. Antheris *nigricantibus, basi emarginatis, appendice apicis brevissimo, acuto; loculis vestigio septi longitudinalis instructis.* Fem. Staminibus *sterilibus distinctis, antheris sagittatis cassis.*

[1] Amœn. Acad. v, p. 404, et Syst. Nat. ed. 10, vol. ii, p. 1206.

[2] Flor. Ind. Occident. iii, p. 1339.

[3] Mich. Flor. Bor.-amer. ii, p. 125.

[4] Annal. du Mus. d'Hist. Natur. vii, p. 385.

[5] l. c.

of *Baccharis* from which the Linnean character was taken, and *Conyza* when reduced to its original species, *C. squarrosa* and *bifrons*, and a few others since added to the genus: for these differ from *Inula* chiefly in the extreme shortness of their ligulæ.

As no satisfactory character has hitherto been given of *Baccharis*, that will serve to distinguish it, as now limited, from the diœcious *Gnaphalia*, I propose the following.

115]

BACCHARIS.

(*Richard*) *in Michaux Amer.* ii, *p.* 125. *Jussieu in Annal. du Mus. d'Hist. Nat.* vii, *p.* 385. Molina *Ruiz et Pavon Prodr. Flor. Peruv.* 111. Baccharidis species *Linn.*

Involucrum imbricatum. *Receptaculum* nudum. *Flosculi* tubulosi, dioici. *Masculi: antheris* exsertis, basi muticis; *stigmatibus* appendice acuto hispidulo; *pappo* subpenicillato. *Feminei* filiformes; *pappo* capillari.

Frutices (Americæ æquinoctialis et temperatæ). Folia *alterna, raro opposita, in quibusdam minuta vel nulla, ramis tunc foliaceo-alatis.* Inflorescentia *terminalis rariusve lateralis, corymbosa, nunc fasciculata.* Involucri *subovati v. oblongi squamæ semiscariosæ, margine simplici.* Mas *pappo cinereo.* Fem. *limbo minuto* 2-3*dentato, staminibus sterilibus nullis: pappo elongato.*[1]

Willdenow, in his edition of Species Plantarum, has retained the four Linnean species of *Calea*, and added to them an equal number, not one of which belongs to any of the genera formed by the original species, but to four others equally distinct.

---

[1] I have observed another diœcious genus with naked receptacle, capillary pappus, and a habit nearly similar to that of *Baccharis*, of which *Baccharis nereifolia* Linn. is the only published species. It may be named

BRACHYLÆNA.

Involucrum imbricatum, squamis coriaceis. *Receptaculum* nudum. *Flosculi* dioici. *Masculi: antheris* exsertis, basi bisetis. *Feminei* angustiores, limbo 5-fido; *filamentis* sterilibus: *stigmatibus* linguiformibus imberbibus. *Pappus* utriusque sexûs pilosus scaber.

Arbusculæ *vel* Frutices (Africæ australis) *subtomentosi.* Folia *alterna integerrima vel dentata.* Inflorescentia *terminalis, subracemosa.* Involucra *subovata, brevia: squamis ovatis, textura uniformi.*

The *first* of these additional species, taking them in the order in which Willdenow has arranged them, is *Calea aspera,* which he adopted from Jacquin; by whom it is well described and figured, though erroneously referred to *Calea.*

This, and not (as M. Richard has supposed) the [116 nearly related species of North America, is what Linnæus originally intended by his *Bidens nivea,* as appears by the specimen in his Herbarium; by his original reference to Vaillant's "Ceratocephalus foliis cordatis s. triangularibus flore albo,"[1] described from a specimen in Surian's Herbarium; and by his afterwards adding as varieties of his species the two plants from Carolina figured in Hortus Elthamensis.

Calea aspera is abundantly distinct from *Bidens,* and has very little affinity with any of the original species of *Calea,* and least of all with *C. jamaicensis,* from which the character was taken. Since its appearance in Willdenow's work, however, it has been continued in this genus, in most of the recent catalogues of Gardens, as those of Desfontaines, Decandolle, and the second edition of Mr. Aiton's Hortus Kewensis; and Lamarck in his Illustrationes Generum has copied Jacquin's figure of it, apparently as the principal example of the genus *Calea.*

It is certainly now too late to recur to the name of *Amellus,* under which Browne, as I have already attempted to prove, first proposed this plant as a distinct genus; Linnæus having soon after given that generic name to two very different plants, to one of which it is still applied; and the real plant of Browne having till now been mistaken, owing in part to his having entirely overlooked the pappus which is deciduous.

Bidens nivea, however, as long ago as 1784 was described by Von Rohr, and published by him in 1792 in the second volume of the Transactions of the Natural History Society of Copenhagen, as a distinct genus, under the name of *Melanthera:* and in 1803 by Richard, in Michaux's Flora Boreali-Americana, where it is called *Melananthera*, and 117] where the two species included by Linnæus in his *Bidens nivea* are for the first time distinguished: and lastly this genus, as named and determined in the work of Michaux, is adopted by Persoon in his Synopsis.

---

[1] Act. Paris. 1720, p. 327.

But as both Von Rohr and Richard have given only the natural character of the genus, and the essential character proposed by Persoon is not altogether satisfactory, I have added the following, and adopted the more generally received name of

MELANANTHERA.

(*Richard*) *in Michaux Amer.* ii, *p.* 106. Melanthera *Von Rohr in Kiobenh. Naturhist. Selskab. bind.* ii, *hefte* 1, *p.* 213. Amellus *Browne Jam.* 317. Bidentis species *Linn.* Caleæ species *Jacquin.*

Involucrum duplici serie polyphyllum, subæquale. *Receptaculum* paleaceum, convexum, paleis foliaceis. *Flosculi* tubulosi, uniformes, hermaphroditi. *Achenium* turbinatum angulatum vertice depresso. *Pappus* e setis (2—18) scabris, distinctis, deciduis.

Herbæ (Americæ æquinoctialis et temperatæ) *pubescentes, scabræ.* Folia *opposita, indivisa v. sublobata.* Capitula *terminalia, pedunculis unifloris, elongatis, ternatis, geminisve.* Involucrum *foliaceum.* Receptaculi *hemisphærici* paleæ *foliolis involucri subsimiles.* Corollæ *albidæ.* Antheræ *nigricantes, appendicibus apicis albidis, basi muticæ; paulo post expansionem corollæ exsertæ, dein* (*contractione filamentorum*) *fauce inclusæ.* Stigmata *appendice acuto hispidulo, post retractionem tubi antherarum exserta; demum subinclusa.*[1]

---

[1] In the extensive collection of plants made by my lamented friend Dr. Smith, on the banks of the Congo, I have observed a Syngenesious genus, which, though belonging to Polygamia superflua and having yellow flowers, is in other respects so nearly related to *Melananthera*, that had it been found with

Obs. In Von Rohr's natural character of *Melanthera* the Nectarium, or glandular body sheathing the base of the style, is introduced, which is the earliest notice I [118 have yet found of this organ in Compositæ, except in Batsch's Analysis Florum, published in 1790, where it is both described and figured in *Coreopsis tripteris.* The merit, however, of establishing its nearly universal existence in the hermaphrodite florets of this extensive class belongs to M. Cassini.

Both Von Rohr and Richard in their characters of *Melananthera* have described the antheræ as shorter than the corolla, which is indeed the case in a particular state of the flower; immediately after its expansion, however, they project considerably, and again become inclosed in the more advanced stage. This fact has been noticed by Jacquin,[1] who considers the final inclosure of the antheræ to be owing to the elongation of the corolla. But the actual increase in length of the corolla is very slight, and by no means sufficient to account for the appearance; the real cause of which is a considerable, and I believe a gradual, contraction of the filaments. This economy is not unfrequent in Compositæ, especially in the tribe of *Helianthecæ,* [119 to which Melananthera belongs.

In M. Cassini's Memoir on the Stamina of Compositæ the retraction of antheræ is not expressly noticed. This

---

ripe seeds only, it would certainly have been referred to it. The following characters, however, prove it to be sufficiently distinct. It may be named

Lipotriche.

Involucrum duplici serie imbricatum, subæquale. *Receptaculum* convexum, *paleis* foliaceis, distinctis. *Capitulum* radiatum. *Ligulæ* (simplici serie) femineæ. *Flosculi* hermaphroditi, *stigmatibus* appendice acuto hispidulo. *Achenia* subuniformia, turbinata; *Pappo* setaceo, caduco.

Herbæ (Africæ æquinoctialis) Folia *opposita, indivisa.* Pedunculi *terminales, terni.* Involucra *brevia, foliacea.* Paleæ receptaculi *carinatæ, nervosæ, acutæ* Corollulæ *flavæ.* Ligulæ *elongatæ,* 3-*dentatæ.* Antheræ *nigricantes, subinclusæ, basi muticæ.* Achenium *obtusè tetragonum.* Pappus, *in disco verticis depressi, brevis, e setulis simplici serie, numerosis* (8—10), *distinctis, denticulatis, caducis vel deciduis.*

Melanantheræ proximè accedit: affinis quoque Ecliptæ *Linn.* Wedeliæ *Jacq.* et Diomedeæ *Cassini* (in Journ. de Phys. tome lxxxii, p. 145), sed ab his omnibus satis distincta videtur.

[1] Collect. ii, p. 291, Ic. Rar. iii, t. 583.

appearance, however, can hardly have escaped so accurate an observer; and his opinion respecting its cause may perhaps be inferred from an observation he has made on the stamina of the tribe in which it is most remarkable, namely *Helianthеæ;* whose filaments below the joint, he says, wither very soon after fœcundation.[1] To this withering, which he does not mention as occurring in any other tribe, the phænomenon in question may be supposed to be ascribed.

But it appears to me, that the contraction or collapse of the filaments, from their previous state of extension, is a vital action, and not the effect of withering or decay, which, however, speedily follows it. For the contraction may in great part be prevented by the separation of the floret, when the filaments are in the state of extension: and in many genera of Compositæ the antheræ are never retracted, but continue to project till they fall off with the corolla.

This contraction is also analogous to the more evident motion or irritability of the filaments long ago noticed by Borelli and Alexander Camerarius[2] in *Cinarocephalæ;* and more fully described in the same tribe by Dal Covolo;[3] whose observations are confirmed and extended to other subdivisions of Compositæ by Koelreuter.[4] A similar con-
120] traction and irritability of the style has been lately described by Mr. Ker in certain species of *Arctotis.*[5]

The *second* species added to the genus by Willdenow is *Calea lobata,* which Linnæus, from the general appearance, I conclude, rather than from actual examination of the plant in Clifford's Herbarium, had referred to *Conyza;* and having no specimen in his own Herbarium, the twofold error of supposing it to belong to Polygamia superflua, and to have a naked receptacle, remained uncorrected in all his subsequent works.

[1] Journal de Physique, tome lxxviii, p. 278.

[2] Ephemerid. Acad. Nat. Curios. cent. ix et x, p. 194.

[3] Discorso della Irritabilita d' alcuni Fiori. Firenze, 1764.

[4] Von Einigen das Geschlecht der Planzen betreffenden versuchen. 3. fortsetz. p. 125.

[5] Botanical Register, i, 34.

Its real structure was first pointed out by Professor Swartz, who consequently referred it to *Calea*, with the character of which it exactly agrees. This alteration is adopted in the first edition of Hortus Kewensis, where the generic character of *Calea* is modified, to admit those species that are without pappus; and by Gærtner, who limits the genus to *C. lobata* and *C. jamaicensis*, as the only species that correspond with the Linnean character. But as *C. jamaicensis*, the original species of *Calea*, has been shown to have a pappus of a very different kind, it becomes necessary to give a new name to *Calea lobata*; and some additions being also wanting to its generic character, I propose the following, and the name of

NEUROLÆNA.

Calea *Gært.*

Involucrum imbricatum, foliaceum. *Receptaculum* paleaceum, planiusculum. *Flosculi* tubulosi, uniformes, hermaphroditi. *Antheræ* inclusæ, basi muticæ (emarginatæ). *Stigmata* acuta, recurva. *Pappus* capillaris, denticulatus, persistens.

Frutex (Americæ æquinoctialis) *erectus.* Folia *alterna, indivisa, et lobata.* Corymbus *terminalis, compositus.* Involucri *subovati foliola obtusa, nervosa.* Paleæ recepta- [121 culi *involucro subsimiles.* Corollulæ *flavæ.*[1]

---

[1] There are two other genera in many respects agreeing with the character here given of *Neurolæna*, which it is necessary to point out. The first is *Carphephorus* of M. Cassini (in Bulletin des Sciences, 1816, p. 198), sufficiently distinct in having the stigmata of *Eupatorium* or *Liatris* with the habit of the latter, from some species of which it differs only in its receptacle having paleæ. The second, not yet described, may be named

PIPTOCARPHA.

Involucrum imbricatium, turbinatum, scariosum. *Receptaculum: paleis* ditinctis. *Flosculi* tubulosi, uniformes, limbo revoluto. *Antheræ* exsertæ, basi bisetæ. *Stigmata* filiformia, acuta, hispidula. *Pappus* pilosus.

Frutex (Brasiliensis) *ramosissimus, decumbens?* Folia *alterna, integerrima, subtus incana.* Involucra *axillaria et terminalia, fasciculata, glabrata, squamis sessilibus obtusiusculis enerviis, textura uniformi.* Paleæ *receptaculi squamis*

The *third* species, *Calea pinifolia*, is adopted from Forster's Florulæ Insularum Australium Prodromus.

The specimen of this plant in George Forster's Herbarium (now forming part of the extensive collection of Mr. Lambert) is very imperfect; it evidently, however, belongs to the same species with a more complete specimen received, without a name, from Forster by Sir Joseph Banks, in whose Herbarium I have examined it, and ascertained that it has a naked receptacle. It therefore cannot be a species of *Calea*, which I have no doubt Forster considered it merely from a certain degree of resemblance to his *Calea leptophylla*. From the structure of its stigmata, antheræ, and involucrum, *Calea pinifolia* belongs, indeed, to a very different tribe, and might even be referred to *Gnaphalium* as it at present stands. But this extensive and ill-defined genus evidently requires reformation; and 122] if the necessity for its subdivision be admitted, it will also, I believe, be found most expedient to apply the name *Gnaphalium* to that section to which *G. luteo-album*, *sylvaticum*, and *uliginosum* belong, and which is characterised by its naked receptacle, its involucrum connivent at top and of equal height with the truncated capitulum, which consists of numerous filiform female florets in the circumference, with a smaller number of hermaphrodite florets in the disk, both of them ripening seeds and having a sessile capillary deciduous pappus.

To *Gnaphalium* so limited *Calea pinifolia*, a shrub with nearly acerose leaves, and in which all or most of the flosculi are hermaphrodite and the radii of the persistent pappus somewhat thickened upwards, cannot be referred.

It seems, however, to approach more nearly to *Antennaria*, a genus separated from *Gnaphalium* by Gærtner, but which, as he has proposed it, consists of three tribes of

---

intimis involucri subsimiles, et unà cum iisdem deciduæ. Corollulæ *glabræ.* antherarum *integerrimæ.* Pappus *albus, radiis simplici serie.*

Obs. I have not seen perfect seeds; and as even in the unripe fall off along with the inner squamæ of the involucrum, and the antheræ ject in a remarkable degree, it is possible the plant here described may be only the male of a diœcious species: it certainly, however, belongs to a genus not before published.

plants sufficiently dissimilar in habit and structure to justify a further subdivision; and, what is remarkable, none of them entirely agreeing with his generic character.

The first tribe consists of herbaceous plants, natives of Europe and North America, having the male and female flosculi in distinct involucra and on different individuals. To this genus the name ANTENNARIA[1] may remain, though

---

[1] ANTENNARIA.

Antennariæ species. *Gærtner.* Gnaphalii species. *Linn. Jussieu.*

Involucrum imbricatum, scariosum, coloratum. *Receptaculum* epaleatum, scrobiculatum. *Flosculi* dioici. *Masculi: antheris* basi bisetis: *stigmatibus* truncatis: *Pappo* vel penicillato v. apice incrassato. *Feminei* filiformes, limbo parvo: *staminum* rudimentis nullis: *Pappo* capillari.

Herbæ *perennes, tomentosæ, incanæ.* Folia *plana, adulta sæpe super glabriuscula; radicalia in plerisque latiora.* Inflorescentia *corymbosa rarò solitaria.* Involucri *turbinati vel quandoque hemisphærici squamæ e basi calycina superne coloratæ* (*albæ v. purpurascentes*). Corullulæ *flavæ.* Antheræ *semiexsertæ.* Pappus *marium niveus, opacus.*

OBS. *Gnaphalium margaritaceum,* which I have referred to this genus, was first described by Clusius; from whose account it appears to have been introduced into the English gardens from America towards the end of the sixteenth century.

It has ever since been very generally cultivated, as an ornamental plant, both in this country and on the continent of Europe; and has a place in several of the European Floras, as well as in those of North America. It is surprising, therefore, that hitherto the male plant only should have been observed, uniformly, however, considered as hermaphrodite, except by M. Cassini, who in his first memoir on *Synantheræ* (in Journal de Physique, tome lxxvi, p. 200) suspects it to be male, from the imperfect appearance of the ovarium.

That this species of *Gnaphalium* is really diœcious, I learned several years ago from an inspection of a specimen of the female plant in the Herbarium of Sir Joseph Banks, who found it on the banks of the Rymney in Glamorganshire, where the plant was first observed by Lhwyd. I have since received several specimens of both sexes from Mr. Bicheno, to whom I had mentioned this fact, and who obligingly undertook to observe the different states of the plant in the same place, where it seems to be really indigenous. I have never been able to discover any female florets in the circumference of the capitulum of the male plant; but in the centre of the female capitulum I have always found two or three imperfect male florets, whose antheræ, although cohering and of the usual form, appear to be destitute of pollen.

The separation of sexes in a still more common plant of this class, namely, *Serratula tinctoria,* has been equally overlooked.

All the authors who have noticed this species, which is included in almost every European Flora, as well as in more than one recent Monograph of the genus, have considered it as hermaphrodite, while it really belongs to *Polygamia diœcia,* or has its perfect sexual organs on different plants. The hermaphrodite plant, apparently perfect, but which I believe very seldom ripens seed, is well figured by Schkuhr (in Botanisches Handbuch, tab. 234); and the female, whose stigmata are remarkably developed and undulated, while the

123] descriptive of the pappus of the male flower only. Its species are *Gnaphalium dioicum* Linn., *alpinum* L., *carpaticum* Wahlenberg, *plantagineum* L., and *margaritaceum* L.

The second tribe, consisting of *Gnaphalium Leontopodium* 124] and *Leontopodioides*, which may be called Leontopodium, is in affinity intermediate between *Antennaria* and *Gnaphalium* as here limited, but has sufficient characters to distinguish it from both.

The third tribe has been found only in South Africa, and consists of shrubs with small rigid heath-like leaves, of which the margins are incurved, the upper surface tomentose, and the under convex and nearly smooth; but by a remarkable twisting they are in most of the species resupinate; a character which seems to have been overlooked in all the described species; namely, *Gnaphalium muricatum*, *mucronatum*, and *seriphioides*. In this tribe, or genus, which may be named Metalasia, the involucrum is generally cylindrical, and in most of the species has a short radius formed by the spreading coloured laminæ of the inner scales; the flosculi are few in number, and all hermaphrodite; and the radii of the pappus, which fall off separately, are either thickened or more strongly toothed at top.

Calea pinifolia does not even belong to this genus, though it has a nearly similar habit; but the margins of its leaves are revolute, and their tomentum chiefly on the under surface. In these respects, as well as in the principal characters of fructification, it agrees with several shrubs, chiefly of New Holland and Van Diemen's Island; among which are *Eupatorium ferrugineum*, *Eupatorium rosmarinifolium*, and *Chrysocoma cinerea* of M. Labillardière. Part of these have the inner squamæ of the involucrum simple, as seems to be the case in *Calea pinifolia*;

antheræ are evidently imperfect, and which generally produces ripe seeds, is represented in English Botany (tab. 38), in Flora Danica (281), and probably also in Svensk Botanik (170). For my knowledge of this fact respecting *Serratula tinctoria* I am indebted to the Rev. Robert Bree of Camberwell, who pointed out to me both its states, which he was then disposed to consider as distinct species.

while in others, as the two species referred to *Eupatorium* by M. Labillardière, they form a short radius. These I am inclined to consider merely sections of one and the same genus, which may be distinguished by the following character, and named

OZOTHAMNUS. [125

Involucrum imbricatum, scariosum, coloratum. *Receptaculum* epaleatum, glabrum. *Flosculi* (pauciores quam 20) tubulosi, vel omnes hermaphroditi, vel paucissimi feminei angustiores in ambitu. *Antheræ* (inclusæ), basi bisetæ. *Stigmata* apice obtuso subtruncato hispidulo. *Pappus* sessilis, pilosus, nunc penicillatus, persistens.

Frutices (Novæ Hollandiæ et Novæ Zelandiæ, vix Africæ australis,) *graveolentes, tomentosi.* Folia *sparsa, integerrima, marginibus sæpius recurvis.* Inflorescentia *terminalis, corymbosa v. congesta.* Involucra *alba v. cinerea: squamis intimis nunc conformibus et conniventibus; nunc laminis patulis niveis radium brevem obtusum efformantibus.* Corollulæ *luteæ.* Pappus *albus.*

The *fourth* species added to *Calea* by Willdenow is *Calea leptophylla* of Forster, whose specimens I have examined in Mr. Lambert's Herbarium. Amongst Forster's drawings, formerly referred to, there is a coloured figure of this plant, by which it appears that he originally considered it to belong to *Gnaphalium.* From this genus he afterwards removed it, probably on finding it referred to *Calea* in the collection of Sir Joseph Banks, by whom it was discovered in New Zealand in a more perfect, at least in a more luxuriant state.

This plant, though agreeing with *Calea* in every part of the Linnean essential character, differs remarkably from it in other points of nearly equal importance, as well as in habit; and along with *Calea aculeata* of M. Labillardière, and several other species also natives of New Holland and Van Diemen's Island, constitutes a genus very nearly related to *Ozothamnus*, from which it is to be distinguished chiefly by the paleæ of its receptacle.

126] I propose to name this genus in honour of *M. Henri Cassini*, whose well-conducted investigation of Compositæ has already thrown much light on the structure and economy of the more important parts of fructification of this difficult class: and especially of those organs from which the distinguishing characters of *Cassinia* are here derived.

I shall add the characters of the species of this genus, which, like *Ozothamnus*, admits of subdivision into two sections; and I have appended to it *Calea spectabilis* of Labillardière, a plant corresponding with it in character, but differing very much in habit from all the other species.

CASSINIA.

Caleæ sp. *Labillardière.*

Involucrum imbricatum, scariosum, pauciflorum. *Receptaculum: paleis* distinctis, squamis intimis involucri subsimilibus. *Flosculi* tubulosi, vel omnes hermaphroditi vel paucissimi feminei angustiores in ambitu. *Antheræ* (inclusæ) basi bisetæ. *Stigmata* apice obtuso subtruncato hispidulo. *Pappus* pilosus v. penicillatus, persistens.

Frutices. Folia *sparsa, sæpius angustata, marginibus recurvis.* Inflorescentia *terminalis, corymbosa rariusve paniculata.* Involucra *alba nunc cinerea raro aurea; squamis intimis sæpius apice conniventibus, nunc patulis et radium brevem obtusum efformantibus.*

† *Involucrum radiatum* (*squamis intimis apice patulis*).

1. C. *leptophylla*, foliis lineari-lingulatis subter ramulisque incanis, corymbis terminalibus, involucris turbinatis.

Calea leptophylla. *Forst. Prodr. n.* 287. *Willd. Sp. Pl.* iii, *p.* 1796. *Persoon, Syn.* ii, *p.* 406. *Poiret, Encycl. Suppl.* ii, *p.* 28.

127] *Loc. Nat.* Novæ Zelandiæ campi arenosi prope

Tolaga, &c. *D. Banks.* Prope Queen Charlotte's Sound. *J. R. et G. Forster.* (v. s. in Herb. Banks et G. Forster.)

† † *Involucrum connivens.*

A. *Fruticosæ.*

2. C. *denticulata,* foliis ovalibus oblongisve acutis spinuloso-denticulatis subter tomentosis, corymbis compositis, involucris hemisphæricis.

Loc. Nat. Novæ Hollandiæ ora orientalis prope Port Jackson. *David Burton.* (v. s. in Herb. Banks.)

3. C. *longifolia,* foliis lanceolato-linearibus elongatis lævibus subter tomentosis, corymbis decompositis, involucris turbinatis.

Loc. Nat. Novæ Hollandiæ ora orientalis prope Port Jackson; in dumetis. (v. v.)

4. C. *aurea,* foliis lanceolato-linearibus elongatis lævibus subter glandulosis, corymbis decompositis, involucris ovalibus: squamis apice aureis.

Loc. Nat. Novæ Hollandiæ ora orientalis prope Port Jackson; in sylvis et dumetis. (v. v.)

5. C. *aculeata,* foliis angusto-linearibus margine revolutis super hispidulis subter ramulisque incanis, corymbis compositis decompositisve congestis, involucris turbinatis.

Calea aculeata. *Labill. Nov. Holl.* ii. *p.* 41, *t.* 185. *Persoon Syn.* ii. *p.* 406. *Poiret Encycl. Suppl.* ii. *p.* 28.

Loc. Nat. Insula Van Diemen; in dumetis et ad ripas fluv. (v. v.)

6. C. *affinis,* foliis angustato-linearibus margine revolutis super hispidulis subter concoloribus, corymbis decompositis congestis, involucris turbinatis. [128

Loc. Nat. Novæ Hollandiæ ora orientalis prope Port Jackson; in dumetis. *D. G. Caley.* (v. s.)

Obs. *C. aculeatæ* nimis affinis.

7. C. *lævis,* foliis angustissime linearibus margine revo-

lutis super lævibus subter ramulisque incano-tomentosis, corymbis compositis, involucris congestis cylindraceis.

Loc. Nat. Novæ Hollandiæ ora australis; in campis ad radices montium prope ortum Spencer's Gulph. (v. v.)

8. C. *arcuata,* foliis angustissime linearibus margine revolutis super lævibus subter ramulisque incano-tomentosis, panicula pyramidata, involucris spicatis cylindraceis arcuatis.

Loc. Nat. Novæ Hollandiæ ora australis; in campis elevatis prope ortum Spencer's Gulph. (v. v.)

9. C. *quinquefaria,* foliis angustissime linearibus super ramulisque glabris, panicula decomposita, involucris turbinatis: squamis 5-fariis.

Loc. Nat. Novæ Hollandiæ ora orientalis prope Port Jackson; in montosis. *D. G. Caley.* (v. s.)

B. *Herbacea.*

10. C. *spectabilis,* panicula decomposita, foliis lanceolatis decurrentibus subter ramisque lanatis.

Calea spectabilis. *Labill. Nov. Holl.* ii. *p.* 42, *t.* 186. *Persoon Syn.* ii. *p.* 406. *Poiret Encycl. Suppl.* ii. *p.* 28.

Loc. Nat. Novæ Hollandiæ ora australis; in sylvis dumetisque prope Memory Cove, Port Lincoln, &c. legi. In Insula Van Diemen a D. Labillardière detecta. (v. v.)

129] Since the publication of Willdenow's Species Plantarum very few alterations have been made in the genus *Calea.*

In Persoon's Synopsis two of the species are excluded; namely, *Calea scoparia,* which, following Swartz, he has referred to *Baccharis;* and *Calea aspera,* adopted from Richard as a species of *Melananthera.* The additional species in the work referred to are *C. cordifolia* of Swartz, already noticed as a genuine *Calea; C. aculeata* and *spectabilis* of Labillardière, which belong to *Cassinia;* and *C. cordata,* adopted from Loureiro, of whose plant nothing is known except from the short description in Flora Cochin-

chinensis, which is only sufficient to render it probable that it neither belongs to *Calea* as I have proposed to limit it, nor to any of the genera hitherto confounded with it.

M. Poiret, in the Supplement to the Botanical Dictionary of the Encyclopédie Méthodique, has under the article *Calea* retained all the species of this genus given by Persoon; and also *Calea aspera;* which, however, he has in a subsequent article correctly referred to *Melananthera.*

Connected with the proper subject of this paper, I shall describe and add some observations on a plant lately sent from Brazil by Mr. Sellow; which, though not strictly referable to Compositæ, probably belongs to a genus at present included in this family; and conclude with a few remarks on the structure and affinities of *Brunonia.*

I have named the Brazil plant

ACICARPHA SPATHULATA.

Herba annua? glaberrima, ramosa, diffusa. *Rami* adscendentes, angulati. *Folia* sparsa, petiolata, exstipulata, spathulata mucronulo brevissimo, sesquiuncialia, crassiuscula? glauca? sæpiùs integerrima; inferiora quandoque extra medium dentata. *Petioli* lineares basi parum dilatata [130 semiamplexicauli; inferiores elongati; superiores plerumque folio aliquoties breviores. *Capitula* solitaria, nunc oppositifolia pedunculata, nunc terminalia subsessilia, basiflora, ovata, flava. *Involucrum* simplici serie pentaphyllum, capitulum floridum superans, foliaceum; foliolis inæqualibus spathulatis sessilibus integerrimis ipsa basi connatis. *Receptaculum* subulato-conicum, paleaceum. *Paleæ* lanceatæ mucronulatæ, inter flosculos hermaphrodito-masculos magis manifestæ, inter hermaphroditos passim abortientes. *Flosculi* tubulosi, uniformes, glabri.

Flosculi ambitûs, duplici triplicive serie, hermaphroditi, utroque organo perfecto. *Corollæ Tubus* gracilis cylindraceus, cum ovario continuus, basique stylo accretus, per lentem 10-striatus. *Limbus* infundibuliformis, 5-fidus, æstivatione

valvata; laciniis semilanceolatis, planis, trinerviis; nervis lateralibus margini parallelo-approximatis, indivisis, apice confluentibus, e nervis alternis tubi infra sinus furcatis ortum ducentibus.

Stamina 5 epipetala, limbi laciniis alternantia.

Filamenta inferne cum tubo arcte connata, superne libera fauci quasi inserta, invicem cohærentia in tubulum 5-dentatum ipsis apicibus, subita mutatione texturæ, articulatis; basi intus incrassatum areis 5 oblongis cum filamentorum axibus alternantibus.

Antheræ continuæ, lineares, dimidio inferiore arcte cohærentes, superiore liberæ; biloculares, loculis longitudinaliter dehiscentibus, valvula interiore angustiore, receptaculo pollinis utriusque loculi longitudinali septiformi: basi emarginatæ, lobulis posticis acutiusculis brevibus polliniferis; apice simplices connectivo ultra loculos haud producto. *Pollen* subglobosum, per lentem pluries augentem obsolete angulatum.

Ovaria connata, singula coronata *calyce* 5-fido dentibus spinescentibus cum laciniis limbi corollæ alternantibus; 131] monosperma, ovulo ovato pendulo, paulo infra apicem affixo funiculo crassiusculo ex ipso apice angustato cavitatis orto; chorda vasculari a puncto insertionis ad extremitatem inferiorem ejusdem lateris attingenti. *Stylus* filiformis glaber, inferne cum basi tubi corollæ connatus. *Stigma* simplex obtusum hispidulum.

Flosculi superiores numerosi hermaphrodito-masculi, paulo minores hermaphroditis, calycis laciniis submembranaceis; ovariis (pariter connatis) imperfectis, sæpius absque ovulo.

Pericarpia (flosculorum ambitûs): *Achenia* conferruminata, singula coronata calyce aucto 5-spinoso, spinis patulis conico-subulatis e substantia suberosa axi solidiori rigida.

Semen pendulum, ovatum extremitate superiore acuminato: *testa* membranacea: *membrana propria* nucleo adhærens. *Albumen* figura seminis, carnosum, copiosum, album. *Embryo* axilis, subcylindraceus, longitudine fere albuminis, albus, dicotyledoneus. *Cotyledones* lineares,

obtusæ, plano-convexæ, vix longitudine *Radiculæ* cylindraceæ, superæ.

Notwithstanding the great difference between my account of this plant and that given by M. de Jussieu of *Acicarpha tribuloides*, I have very little doubt that they both belong to the same genus; though from the above description it is evident that *Acicarpha spathulata* is not referable to Compositæ. To this plant *Calycera* of Cavanilles, in the seeds of which M. Correa has found albumen, seems to be very nearly related; and a third genus, probably referable to this group, is *Boopis*, described by M. de Jussieu in the same Memoir with *Acicarpha*. The important characters, however, of the pendulous ovulum and inverted embryo remain to be ascertained in all these; and the presence of albumen in *Acicarpha tribuloides* (in *Acicarpha lanata* of Lagasca in Pers. Syn. ii. p. 488, if it really belong to this genus), and in both species of *Boopis*. Another [32 question respecting the latter genus is, whether its capitulum be simple, as it certainly is in *Acicarpha spathulata*; or compound, as Jussieu's figure of *Boopis anthemoides* seems to indicate.

In the mean time, with the necessary knowledge of structure of *Acicarpha spathulata* only, I shall venture to propose this group as a distinct natural family to be placed between Compositæ and Dipsaceæ; though upon the whole somewhat more nearly approaching to Compositæ. This family, if my conjectures respecting *Calycera* and *Boopis* should be hereafter verified, may be called CALYCEREÆ; *Acicarpha* even as a generic name being barely tenable, provided the original species agrees with that here described: for on this supposition M. de Jussieu has mistaken the laciniæ of the perianthium for paleæ of the receptacle, deriving the name of the genus from their form; and has entirely overlooked the real paleæ, which, though they could not have suggested this name, may however sanction its being retained, if it be not still better to change it to *Acicarpa*.

It will be attended with similar advantage to form a separate family of

BRUNONIA,

as a link of equal importance, connecting *Compositæ* with *Goodenoviæ*, but from both of which it is in many respects very distinct. As I have formerly described this genus, and made several observations on its principal affinities,[1] I shall here only state the more important relations and distinctions between it and those families to which it appears to me most nearly to approach.

Brunonia agrees with *Goodenoviæ* in the remarkable indusium of the stigma; in the structure and connexion of 133] the antheræ; in the seed being erect; and essentially in the æstivation of corolla. It differs from them in having both calyx and corolla distinct from the ovarium; in the disposition of vessels in the corolla; in the filaments being jointed at top; in the seed being without albumen; and in its remarkable inflorescence, compatible, indeed, with the nature of the irregularity in the corolla of *Goodenoviæ*, but which can hardly coexist with that characterizing *Lobeliaceæ*.[2]

With *Compositæ* it agrees essentially in inflorescence; in the æstivation of corolla; in the remarkable joint or change of texture in the apex of its filaments; and in the structure of the ovarium and seed. It differs from them in having *ovarium liberum* or *superum*; in the want of a glandular disk; in the immediately hypogynous insertion of the filaments; in the indusium of the stigma; and in the vascular structure of the corolla, whose tube has five nerves only, and these continued through the axes of the laciniæ, either terminating simply (as is at least frequently the case in *Brunonia sericea*), or (as in *B. australis*) dividing at top into two recurrent branches forming lateral nerves, at first sight resembling those of Compositæ, but which hardly reach to the base of the laciniæ.

It is a curious circumstance that *Brunonia* should so completely differ from Compositæ in the disposition of vessels of the corolla, while both orders agree in the no less remarkable structure of the jointed filament; a character which had been observed in a very few Compositæ[1] only before the publication of M. Cassini's second Dissertation, where it is proved to be nearly universal in the order.

---

[1] Prod. Flor. Nov. Holl. p. 589.

[2] See Flinders's Voyage to Terra Australis, ii. p. 559 [*vol. i, p.* 32].

In the opposite parietes of the ovarium of *Brunonia* two nerves or vascular cords are observable, which are continued into the style, where they become approximated and parallel. This structure, so nearly resembling that of Compositæ, [134 seems to strengthen the analogical argument in favour of the hypothesis advanced in the present paper—of the compound nature of the pistillum in that order, and of its type in phænogamous plants generally;—*Brunonia* having an obvious and near affinity to *Goodenoviæ,* in the greater part of whose genera the ovarium has actually two cells with one or an indefinite number of ovula in each; while in a few genera of the same order, as *Dampiera, Diaspasis,* and certain species of *Scævola,* it is equally reduced to one cell and a single ovulum.

Sir James Smith, in establishing *Brunonia* as a genus, is disposed to refer it to *Dipsaceæ.* To certain species of this order it, indeed, bears a striking resemblance in habit; it also very nearly agrees with them in its remarkable inflorescence; and one great objection to its union with them may be supposed to be removed in adopting M. Decandolle's account of their ovarium.

But as *Brunonia* differs from the whole order in the following characters, all of which are of primary importance;—namely, in the origin and æstivation of corolla; in the insertion and whole structure of stamina; in the indusium of the stigma; in the ovulum being inserted at the base of the cavity of the ovarium; in the erect embryo and want of albumen;—I continue to think that its proper place in the natural method is between *Goodenoviæ* and *Compositæ.*

---

[1] Batsch Anal. Flor. p. 107; et Schkuhr Handb. tab. 236 et 244.

I shall conclude this subject, by proposing a few queries respecting the indusium of *Brunonia* and *Goodenoviæ.*

Is this remarkable covering of stigma in these families merely a process of the apex of the style? or is it a part of distinct origin, though intimately cohering with the pistillum? On the latter supposition, may it not be considered as analogous to the glandular disk surrounding or 135] crowning the ovarium in many other families? And, in adopting the hypothesis I have formerly advanced[1] respecting the nature of this disk in certain families,—namely, that it is composed of a series of modified stamina,—has not the part in question a considerable resemblance in apparent origin and division to the stamina of the nearly-related family *Stylideæ?*

To render this supposition somewhat less paradoxical, let the comparison be made especially between the indusium of *Brunonia* and the imperfect antheræ in the female flowers of *Forstera.* Lastly, connected with this view, it becomes of importance to ascertain whether the stamina in *Stylideæ* are opposite to the segments of calyx or of corolla. The latter disposition would be in favour of the hypothesis. This, however, is a point which will not be very easily determined, the stamina being lateral. In the mean time, the existence and division of the *corona faucis* in *Stylidium* render it not altogether improbable that they are opposite to the segments of the corolla.

Since the preceding paper was submitted to the Society, M. Cassini has published[2] the substance of a Memoir, which he read to the Academy of Sciences of Paris in August last, on a new family of plants named by him BOOPIDEÆ, and consisting of *Calycera, Boopis,* and *Acicarpha.* I have also, through the liberality of Messrs. de Jussieu, Desfontaines, and Baron Delessert, had the opportunity of examining specimens of *Acicarpha tribuloides* in flower and fruit, of both species of *Boopis* in flower, and detached flowers and pericarpia of *Calycera*. In all of these I have found the ovulum pendulous; and in *Acicarpha* and *Calycera* an inverted embryo occupying the axis of a fleshy albumen. My conjectures, therefore, on their struc- [136 ture and relation to *Acicarpha spathulata* of the preceding paper, are completely verified by this examination, as well as by the observations of M. Cassini, who with his usual acuteness has detected the principal characters distinguishing *Boopideæ* from Compositæ and Dipsaceæ, between which he has also placed them.

---

[1] Linn. Soc. Transact. x. p. 159. [*Ante, p.* 133.]

[2] Bulletin des Sciences, 1816, p. 160.

As M. Cassini's Memoir, though read subsequently to mine, is already published, the name *Calycereæ*, which I have proposed for this family, is superseded by that which he has given it.

But as his account of the order is by no means complete, several characters of considerable, though not primary, importance being entirely omitted, I may be allowed to add to my paper some remarks on the more essential points of resemblance and difference between it and the two families to which it is most nearly related.

The principal characters distinguishing *Boopideæ* from the whole of *Compositæ* are the pendulous ovulum and the albumen inclosing the embryo, of which the radicle points to the apex of the pericarpium. It appears to me necessary to state all these characters, and nearly in the terms in which they are here given: for, 1st, A pendulous ovulum most frequently, indeed, is not, however, invariably connected with *radicula supera*, though that direction of radicle might here, as well as in Compositæ, with confidence have been inferred from the vascular structure of the ovulum.[1] 2dly, Where the insertion of the ovulum is, as in this family, evidently below the upper extremity, the radicle

---

[1] Some of the indications in many cases afforded by the structure of the unimpregnated ovulum, of the position and direction of the parts of the future embryo, have hitherto been overlooked: the subject, however, for its elucidation requires details incompatible with the limits of the present communication. I have in another place (Flinders's Voyage to Terra Australis, ii. p. 601 [*vol. i, p.* 77]) thrown out a similarhint, which has probably attracted no attention, and must reserve the explanation of both for a separate essay.

137] which points to this extremity cannot in strict propriety be described as directed towards the umbilicus. M. Cassini has not noticed the direction of the radicle; either from supposing it constantly connected with that of the ovulum, or, which is more probable, from not having ascertained it.

These distinctive characters may be considered as fully sufficient to authorise the separation of *Boopideæ* from Compositæ; yet the same differences exist between certain genera referred and really belonging to *Rubiaceæ* and the principal part of that order.

There are, however, three other characters unnoticed by M. Cassini, which distinguish the flowers of *Boopideæ* from the hermaphrodite flowers of the whole of Compositæ; namely, the accretion of the base of the style with the tube of the corolla; the absence of the epigynous disk or nectarium; and the longitudinal subdivision of each cell of the anthera by a "receptaculum pollinis," as in most other families, and of which, indeed, there seems to be the rudiment in the syngenesious genus *Petrobium*, described in the preceding paper.

In the partial cohesion of the antheræ, in which they resemble *Jasione*, they certainly differ from all known Compositæ: but as in certain Compositæ the antheræ are very slightly connected or entirely distinct;—this, though a remarkable circumstance, can hardly be employed as a distinguishing character.

The principal characters in which *Boopideæ* differ from the greater part, though not from the whole of Compositæ, are the corolla being continuous, or not jointed, with the ovarium; the antheræ having no membranaceous appendix at top; and the undivided stigma.

Boopideæ differ from *Dipsaceæ* in the vascular structure and valvular æstivation of corolla; in the æstivation, insertion, 138] and connexion of antheræ; in the absence of the partial involucrum; and in having alternate leaves.

In adopting M. Decandolle's description of *Dipsaceæ*,[1] they would differ also in the important character of "ovarium inferum." This distinction, however, is neither universal, nor I believe absolute in any case.

---

[1] Flor. Franc. 3me ed. vol. iv. p. 221.

M. Auguste Saint Hilaire in his excellent Memoir on *Primulaceæ*,[1] while he admits the correctness of M. Decandolle's account with respect to great part of *Dipsaceæ*, has at the same time well observed, that in several species of *Scabiosa* the ovarium is entirely united with the tube of the calyx. But neither of these authors has remarked the curious, and I believe peculiar, circumstance, of the base of the style cohering with the narrow apex of the tube of the calyx, even in those species of the order in which the dilated part of the tube is entirely distinct from the ovarium.

This kind of partial cohesion between pistillum and calyx is directly opposite to what usually takes place, namely, the base of the ovarium being coherent, whilst its upper part is distinct. It equally, however, determines the apparent origin or insertion of corolla and stamina, producing the unexpected combination of "flos superus" with "ovarium liberum."

In the vascular structure of the corolla *Boopideæ* may be considered as essentially agreeing with *Compositæ*, in many of whose genera the middle nerves of the tube and segments are equally manifest. In stating the character derived from this source in either of these orders, it is not sufficient to describe the nerves of the laciniæ only as M. Mirbel has done in his character of Compositæ,[2] and M. Cassini in that of Boopideæ: but it is also necessary to give their [139
disposition in the tube or undivided part of the limb; there being instances in both families where the lateral nerves of the segments do not unite at top; and, as has been formerly remarked, several examples in other families of a nearly similar disposition in the segments, accompanied by a different disposition in the tube. To the examples of this kind formerly given, *Globularia cordifolia* may be added, in the segments of whose lower lip there are three simple nerves, of which the lateral do not unite at top, and con-

---

[1] Mem. du Mus. d'Hist. Natur. ii. p. 47.

[2] Elemens de Physiol. Veget. et de Botan. ii. p. 885.

tinue distinct nearly to the base of the tube, where they converge and appear to unite with the middle nerve.

In *Acicarpha* and *Boopis* the filaments appear to me jointed as in Compositæ; a character I have not been able to observe in the very few flowers which I have examined of *Calycera*.

In *Acicarpha* the florets of the circumference are hermaphrodite and apparently complete, the antheræ containing pollen and the ovaria producing seed; while those of the disk are male with an incomplete pistillum. Such an arrangement has not hitherto been observed in Compositæ, in which, wherever the central florets are male with an imperfect pistillum, those of the circumference are female with or without the rudiments of stamina.

The regularity in the order of expansion of flowers from the base to the top of the capitulum in *Acicarpha tribuloides* and *spathulata*, and the irregularity, approaching to the inverted order, which I have found to exist in both species of *Boopis*, seem to prove the capitulum to be simple in the former genus and compound in the latter, notwithstanding the great resemblance between their involucra. The exact nature of its composition, however, in *Boopis* can only be satisfactorily determined in recent specimens.

140] This irregular expansion in *Boopis*, which renders even the generic name improper, and at present the want of satisfactory characters to distinguish it from *Calycera*, are objections to the name M. Cassini has chosen for this family; while that of *Calycereæ*, which I have proposed, derived from the genus first described, and applicable to all the genera of the order, appears to me unexceptionable: especially as there seems no reason to doubt that the part which I have considered as calyx in *Boopideæ* is really such; its divisions being generally in equal number, and alternating with those of the corolla. It may be observed that a like alternation of the divisions of the pappus with the segments of the corolla obtains in those genera of Compositæ where both parts are in equal number. But in some cases, where the division of pappus is still further reduced, the same alternation does not exist, especially in those genera having vertically compressed pericarpia and two aristæ, as *Spilanthus* and *Salmea*.

The absence of "discus epigynus" in *Boopideæ* is a necessary consequence of the accretion of the base of the style with the tube of the corolla. It seems to me, however, that a modification of the same organ may be traced in the five thickened areolæ observable within and near the base of the tube formed by the filaments in *Acicarpha spathulata;* and much more distinctly in the same situation in *Boopis balsamitifolia*, where they have the appearance of five adnate fleshy bodies alternating with the filaments.

This apparent decomposition of the glandular disk in *Boopideæ*, compared with its state in Compositæ, as well as its transposition and the alternation of its parts with the stamina, seem to give some additional support to the conjecture I have formerly hazarded in the paper on *Proteaceæ*, published in the Society's Transactions (vol. x, p. 159[1]); namely, that in several families—for the hypothesis is not meant to be extended to all—this part, even in its [141 simplest state, may be considered as formed of a series of modified stamina: Or, merely to state the facts from which the conjecture originates, that there are certain families in some of whose genera this organ exists in its simplest form, that of an undivided fleshy ring; while in other genera of the same families it consists of several distinct bodies alternating with the stamina, and in some cases putting on the appearance of barren filaments.

This hypothesis is chiefly applicable to families in which the number of stamina is equal to the divisions of one floral envelope only, the nectarium being supposed to be formed of the second series: but it receives its principal support from *Scitamineæ*,[2] where the glandular bodies belong actually to the same series with the perfect stamen.

I am aware at the same time of several objections to its generalisation. Thus, the nectarium or glandular disk exists in families where, though the stamina are definite, they are equal in number to the divisions of calyx and corolla united; and moreover, in such families where it consists of distinct parts, these parts are placed where an addition to the number of stamina is least likely to take place, as in *Crassulaceæ.* Here, however, as in many other cases, the divisions of the disk are opposite to the ovaria; they may therefore be supposed more intimately connected with the pistilla than with the stamina; an opinion which is I believe held, though not yet published, by the ingenious M. Decandolle with respect to *Ranunculaceæ.* In support of this opinion it may be noticed that in *Pæonia Moutan,* where the disk or urceolus is in the state of the greatest development, when a multiplication of the pistilla takes place, which in the double-flowered varieties of this [142] species it not unfrequently does by the addition of one or more inner series, the rudiments of an analogous disk are produced along with each of the additional series.

---

[1] [*Ante, p.* 133.]

[2] See Flinders's Voyage to Terra Australis, ii. p. 574 [*vol. i, p.* 49].

Yet, in opposition to this view, I have in a single instance found one of the divisions of the urceolus in *Pæonia Moutan* changed into an anthera; and the divisions of the apparently analogous organ in *Aquilegia,* which in their usual state resemble barren filaments, have sometimes been observed with perfect antheræ.[1]

---

[1] Schkuhr Handbuch, tab. 146.

CHARACTERS AND DESCRIPTIONS

OF

THREE NEW SPECIES OF PLANTS,

FOUND IN CHINA BY CLARKE ABEL, Esq.;

SELECTED FROM

A SMALL COLLECTION OF SPECIMENS,

THE ONLY PART OF HIS HERBARIUM THAT ESCAPED THE WRECK OF THE ALCESTE.

BY

ROBERT BROWN, F.R.S.

[*Extracted from the 'Narrative of a Journey in the interior of China,' by* Clarke Abel, Esq., *pp.* 374—379.]

LONDON.

1818.

CHARACTERS AND DESCRIPTIONS [374

OF

THREE NEW SPECIES OF PLANTS,

&c. &c.

HAMAMELIS. *Linn.*

Syst. Linn. Tetrandria Digynia.

Char. Gen. *Petala* 4, elongata, æstivatione valvato-involuta! *Capsula* semiinfera, bilocularis. *Semina* solitaria.

Ord. Nat. Hamamelideæ, *Br.*.

Char. Gen. *Petala* elongata, æstivatione valvato-involuta!

Obs. Hamamelideæ notis præsertim sequentibus distinguuntur. *Flos* semisuperus, completus, tetrapetalus. *Stamina* antherifera quatuor, petalis alternantia; *Antheris* basi insertis, bilocularibus, loculo singulo dehiscenti valvula unica medio semiseptifera, et vel altera sutura incompleta persistenti, vel utraque solubili decidua. *Ovarium* biloculare, loculis monospermis, ovulis pendulis (v. appensis). *Styli* duo. *Fructus* semiinferus, capsularis. *Embryo* longitudine fere albuminis: *radicula* supera.

Huic ordini, cui referenda Hamamelis, *Linn.*, Dicoryphe, *Aub. Du Petit-Thouars,* et Dahlia, *Thunb.*, forsan adjicienda, in distincta tamen sectione, Fothergilla, *Linn.*, pericarpio, semine? necnon habitu similis; petalorum defectu, staminibus numerosis et dehiscentia antherarum diversa.

Hamamelideæ hinc affines *Bruniaceis*, (ordo cui pertinent Brunia, Staavia, Linconia, Thamnea et Erasma,) ab iisdem distinguuntur antherarum insertione et dehiscentia, ovarii loculis monospermis, capsulæ dehiscentia, floribus quadrifidis et habitu; inde accedunt Corno, Marleæ, *Roxb.* (quæ Stylidium, *Lour.*, fide exempl. ab ipso auctore,) generibusque affinibus, et quodammodo *Araliaceis*, diversæ structura antherarum, fructu capsulari aliisque notis.

375] HAMAMELIS CHINENSIS. *Tab.*[1]

Hamamelis foliis integerrimis. *Soland. Mss. in Biblioth. Banks.*

Arbuscula sinensis cisti minoris folio rigidiore, flores candicantes in 5 vel 6 lacinias longas angustas ad umbilicum usque divisos binatim plerumque ferens, fructu ovato parvo bivalvi villoso glandis ad instar calyculato. *Cunningham in Pluk. Amalth.* 32*, *tab.* 368, *fig.* 2, fide speciminum in Herb. Pluk.

Loc. Nat. China prope Nan-king, *D. Abel;* Insula Cheusan, *Cunningham.*

Descriptio. *Frutex* decumbens, ramosissimus, ramis ramulisque teretibus, ultimis cinerascentibus, furfuraceis pube stellari brevi. *Folia* alterna, brevè petiolata, integerrima, subovata, acutiuscula vel obtusa, basi inæquali, uninervia, supra avenia, subtus venis anastomozantibus reticulata, utrinque pube stellari brevi, subtus copiosiore, cinerea, 8-10 lineas longa. *Stipulæ?* caducæ. *Capitula* 3-5-flora, pedunculata, ramulos breves terminantia v. axillaria. *Calyx* pube stellari cinereus, furfuraceus; limbo supero, quadrifido, laciniis ovatis, planis, trinerviis, extus pubescentibus, intus glabris, æstivatione imbricatis, deciduis. *Petala* 4, æqualia, laciniis calycis alternantia, elongata, calycem aliquoties, ter quaterve, superantia, membranacea, glabra,

---

[1] [*See note at vol. i, p.* 187.]

plana, linearia, obtusa, integerrima passimque emarginata, trinervia, nervis ad basin usque distinctis, infernè simplicissimis, supernè divisis, medio ramosiore; æstivatione e basi valvata, supra seorsim spiraliter involuta. *Stamina* antherifera quatuor, epigyna, æqualia, calycis laciniis opposita, brevia, æstivatione conniventia. *Filamenta* brevissima, glabra, crassiuscula. *Antheræ* stantes, ovato-quadratæ, glabræ, acumine subulato adscendente, ipsa anthera dimidio breviore; biloculares, loculis lateralibus, medio longitudinaliter sulco, septum partiale indicante, insculptis, valvulâ unicâ medio semiseptiferâ, deciduâ. *Squamulæ* (stamina sterilia,) quatuor, glabræ, abbreviatæ, latiores quam longæ, emarginatæ v. semibifidæ, staminibus alternantes. *Ovarium* inferum, brevè turbinatum, disco epigyno nullo, biloculare, loculis monospermis, ovulis pendulis (appensis). *Styli* duo, brevissimi, distantes. *Stigmata* simplicia. *Capsula* semiinfera, corticata, dicocca, coccis semibivalvibus, contrariis segmentis corticis bivalvis.

Obs. Hamamelis Chinensis a Virginica differt valvulis antheræ deciduis pauloque habitu; an itaque (sub nomine Loropetali) in proprium genus separanda?

TABULÆ EXPLICATIO. [376

Ramus florifer et Ramulus fructifer, uterque magnitudine naturali.

Ad alterum latus tabulæ Flores magnitudine aucti.

1. Flos hinc apertus et vi expansus.

2. Anthera ante dehiscentiam: 3. Eadem post dehiscentiam, valvulis jam delapsis.

4. Pars floris cum ovario longitudinaliter secto; ostendens stylos duos et loculos monospermos.

5. Ovulum, cicatrice umbilicali juxta apicem.

6. Capsula, magnitudine naturali.

7. Pubes stellata, aucta.

ABELIA.[1]

Syst. Linn. Didynamia Angiospermia, post Linnæam.

Char. Gen. *Pericarpium* inferum, (abortione) monospermum, indehiscens, calyce foliaceo coronatum. *Involucrum* 2-multiflorum, 6-polyphyllum.

Ord. Nat. Caprifoliaceæ, Sect. I. *Juss. Gen.* 211. (Lonicereæ *Br.*) inter Linnæam et Symphoricarpum.

Char. Gen. *Calyx* foliaceus. *Corolla* subinfundibuliformis, 5-loba. *Stamina* 4, didynama. *Ovarium* 3-loculare: loculis duobus polyspermis, abortientibus! tertio monospermo fertili. *Pericarpium* monospermum, indehiscens, calycis limbo foliaceo coronatum. *Involucrum* bi-multiflorum, foliolis sex pluribusve.

Frutices *decumbentes vel debiles, glabri.* Folia *opposita, petiolata, dentato-crenata.* Pedunculi *modo axillares, trichotomi vel trifidi; modo terminales indivisi.*

Patria China et Japonia.

Obs. Linnææ proximum genus, quacum convenit staminibus didynamis et structura ovarii! diversum fructu hinc uninervi inde quinquenervi, coronato calycis limbo foliaceo persistente, necnon inflorescentia et habitu.

377] *Symphoricarpus* habitu paulò magis accedens *Abeliæ*, ab eadem facile distinguitur, inflorescentia, floribus pentandris, ovarii quadrilocularis loculis duobus monospermis, fertilibus; duobus reliquis polyspermis sterilibus!

Triosteum fructu calyce foliaceo coronato *Abeliæ* simile, abunde diversum est ovarii trilocularis loculis omnibus monospermis fertilibus, floribus pentandris et inflorescentia.

---

[1] This account of the genus Abelia is extracted from a manuscript dissertation on the natural order to which it belongs.

ABELIA CHINENSIS. *Tab.*[1]

Abelia involucris bifloris, pedunculis trichotomis, staminibus exsertis.

Loc. Nat. Chinæ provincia Kiang-si; prope lacum Po-Yang. *D. Abel.*

DESCRIPTIO. *Frutex* decumbens. *Ramuli* virgati, cinerascentes, pube tenuissima, per lentem solùm obvia. *Folia* opposita, petiolata, exstipulata, vix uncialia, ovata, acutiuscula, plana, crenato-serrata, uninervia, venis anastomozantibus, immersis, paginis subdiscoloribus, superiore pube rarâ brevissimâ simplici conspersâ, marginibus per lentem ciliatis pilis acutis. *Pedunculi* e summis alis et terminales, approximati, thyrsi speciem efformantes, trichotomi, quandoque tantum trifidi, divisuris bibracteolatis. *Involucrum* biflorum, hexaphyllum, subæquale, persistens, abbreviatum ovariis sessilibus aliquoties brevius. *Calyx* superus, limbo quinquepartito, æquali, laciniis spathulato-oblongis, planis, patentibus, uninerviis, venosis. *Corolla* infundibuliformis, calyce duplo longior: *tubo* quinquenervi, nervis quatuor approximatis, quinto distanti: *fauce* imberbi: *limbo* quinquefido, patenti, laciniis ovatis, obtusis, subæqualibus. *Stamina* quatuor (absque rudimento quinti): *Filamenta* dimidio inferiore tubo corollæ adnata, ejusdem nervis quatuor approximatis primo intuitu subopposita, sed reverà alterna; superiore libera, filiformia, pilosiuscula, parum inæqualia, apicibus exsertis: *Antheræ* incumbentes, oblongolineares, loculis appositis, absque manifesto connectivo, medio longitudinaliter dehiscentibus. *Ovarium* inferum, lineari-oblongum, modice compressum, tenuissime pubescens, hinc uninerve (fig. 2), inde quinquenerve (fig. 1), in collum breve apice angustatum, basi acuta parum attenuata; triloculare (fig. 1 et 3) (collo e divisione chordæ pistillaris fenestrato), loculis duobus (interioribus?) polyspermis, ovulis simplici serie insertis, supremo erecto! reliquis pendulis, omnibus constanter abortientibus; loculo tertio in latere uninervi (exteriore?) ovarii, monospermo, ovulo ovato, reliquis aliquoties majore, a margine inferiore fenestræ chordæ pistillaris pendulo, vasculoso fasciculo dorsali! 378] *Stylus* filiformis, glaber, longitudine staminum. *Stigma* depresso-capitatum, indivisum, imberbe. *Pericarpium* figura ovarii, eoque vix duplo majus, calycis limbo, proportionatim aucto, coronatum, monospermum, loculis duobus abortientibus ad alterum latus pressis (fig. 4), indehiscens, coriaceum, exsuccum. *Semen* (fig. 4 et 5) subcylindraceum, cavitatem ovarii fere replens, prope apicem insertum funiculo brevi. *Integumentum* duplex: *exterius* membranaceum, laxiusculum; *interius* tenuissimum, albumini arctè adherens. *Albumen* (fig. 6) figura et magnitudine seminis, dense carnosum, album. *Embryo* (fig. 6 et 7) axilis, rectus, albus, albumine aliquoties (fere quadruplo) brevior: *Cotyledones* breves: *Radicula* supera.

---

[1] [*See note at vol. i, p.* 187.]

Obs. The genus *Abelia* is named in honour of its discoverer, Clarke Abel, Esq., who accompanied the late Embassy to China, as Chief Medical Officer in the suite of Lord Amherst. Nearly the whole of the extensive collections formed in China by this zealous naturalist were, unfortunately for science, lost in the wreck of the Alceste; the only part saved being a small selection of specimens of plants which he had presented, while in China, to Sir George Staunton, by whom they were most liberally returned to him on his arrival in England.

EURYA. *Thunb. Jap.* p. 11.

Syst. Linn. Polygamia Diœcia.

Char. Gen. Hermaph. *Calyx* 5-part. *Corolla* monopetala, 5-partita. *Stamina* 12—15. *Ovarium* superum, 3-loc. *Stylus* 1. *Stigmata* 2—3.

Mas. Cal. Cor. et Stam. ut in Hermaph. *Pistillum* 0.

Fem. Cal. Cor. Hermaph. *Stamina* 0. *Ovar.* 3-loc. *Stylus* 1. *Stigmata* 3, revoluta. *Bacca* polysperma.

Ord. Nat. Ternströmiaceæ. *Mirbel, Nouv. Bullet.* 3, p. 381. *De Candolle, Prop. Med. des Plantes*, p. 203.

Char. Gen. Flores Polygami-Dioici. *Calyx* 5-part. *Petala* 5, unguibus connatis. *Stamina* 12—15, simplici serie. *Ovarium* 3-loc. polyspermum. *Stylus* 1. *Stigmata* 3. *Bacca* trilocularis, polysperma. *Semina* reticulata.

Obs. Proximum genus *Fresieræ*, distinctum floribus polygamis et petalis basi connatis.

Eurya Chinensis. *Tab.*[1] [379

Eurya foliis cuneato-ovalibus obovatisque, ramulis ultimis pubescentibus.

Loc. Nat. Chinæ provinciæ Kiang-si et Quang-tong; in campis et collibus.

Desc. *Frutex* bipedalis, ramosissimus, erectus, ramis teretiusculis, patentibus, novellis pube simplici, copiosa, subappressa. *Folia* alterna, petiolata, exstipulata, coriacea, sempervirentia, cuneato-ovalia passimque obovatocuneata, serrata, novella subtus pilis raris conspersa, vix uncialia, siccata subtus præsertim flavicantia. *Flores* parvi, axillares, 3—5, fasciculati, brevè pedunculati, pedunculis apice bibracteolatis. *Calyx* foliolis ovatis, obtusiusculis, duobus exterioribus oppositis minoribus, æstivatione imbricatis. *Corolla* monopetala, subcampanulata, alba, calyce sesquilongior, e petalis quinque, unguibus arctè connatis, laminis obovatis apice patulis, formata. *Stamina* circiter 12—15, hypogyna, simplici serie inserta, basi corollæ leviter cohærentia. *Filamenta*, filiformia, glabra, antheris parum longiora. *Antheræ* juxta basin leviter emarginatam insertæ, lineares, mucronatæ, biloculares, loculis absque manifesto connectivo appositis, medio longitudinaliter dehiscentibus. *Ovarium* sessile, disco nullo cinctum, ovatum, glabrum, triloculare, loculis polyspermis. *Stylus* unicus, subulatus, glaber. *Stigmata* tria, filiformia, obtusiuscula, stylo breviora. *Masculi flores* absque pistillo. In *femineis* nulla rudimenta staminum.

---

[1] [*See note at vol. i, p.* 187.]

Obs. Quam maxime affinis Euryæ Japonicæ *Thunb. Jap.* 191 quæ ramulis ultimis glaberrimis foliisque ellipticis acutis distincta.

CHARACTERS AND DESCRIPTION

OF

LYELLIA,

A NEW GENUS OF MOSSES,

WITH

OBSERVATIONS ON THE SECTION OF THE ORDER TO WHICH IT BELONGS;

AND SOME REMARKS ON

LEPTOSTOMUM AND BUXBAUMIA.

BY

ROBERT BROWN, Esq., F.R.S., Libr. L.S.

(Read April 6th, 1819.)

[*Extracted from 'The Transactions of the Linnean Society of London,' Vol. XII, pp.* 560—583.]

CHARACTERS AND DESCRIPTION [560
OF
LYELLIA, &c.

In the tenth volume of the Society's Transactions, I have given a description of *Dawsonia*,[1] a genus of Mosses having entirely the habit of *Polytrichum*, but whose peristomium, instead of consisting of a single row of short teeth connected by a horizontal membrane, is composed of an indefinite number of capillary cilia. These cilia, originating both from the inner surface of the capsule, immediately within the orifice, and from the columella itself, form a loose pencil, of which the hairs are sufficiently distinct to allow of a gradual discharge of the seeds.

The correctness of this account of *Dawsonia*, especially as to the origin of the peristomium[2], and the nature of the supposed columella[3], has been questioned by some of those authors, who have since adopted the genus.

From a careful re-examination, however, I find no reason to alter in any respect the generic character formerly given; and to the description of the species I have only to add, that the upper surface of the leaves is furnished with parallel lamellæ, like those of *Polytrichum;* and that the inner membrane of the capsule is, in the early stage at least, [561
connected by numerous plicæ with those elevations of the

---

[1] [*Vol. i, p.* 348.]

[2] Bridel Meth. Nov. Muscor. p. 205.

[3] De la Pylaie in Journal de Botanique appliq. iii. p. 134.

surface of the columella, which are noticed in my description, and well expressed in Mr. Bauer's excellent figure.

My principal object, in the present paper, is to establish another genus of the same family, equally related to *Polytrichum* in habit, which resembles *Dawsonia* in the remarkable form of its capsule, but whose peristomium is of so peculiar a structure as to require its separation from both these, and readily to distinguish it from all other genera of Mosses.

This new genus I shall name *Lyellia,* in honour of Mr. Charles Lyell, an accurate English Botanist, who has particularly studied, and made several important discoveries in, the natural order to which it belongs.

Mr. Hooker has already intimated his intention of establishing a *Lyellia* in the same order, to consist of three species of *Leucodon* that have a mitriform calyptra;[1] but he has readily agreed to transfer the name of our friend from a genus, respecting which there is still some uncertainty, to one so unquestionable as that here proposed; and as I have not a drawing prepared to accompany the present communication, I trust he will give the necessary illustration of this interesting genus, in an early number of his excellent *Musci Exotici.*

LYELLIA.

Stoma edentulum, clausum *epiphragmate* (crasso depresso), cujus *discus circularis* a limbo (latiori) persistenti secedens, cum columellâ remanenti inclusâ cohæret.

Capsula hinc plana inde convexa.

Calyptra cucullata (apice pilosa).

562] *Muscus* (Nepalensis) *habitu* Polytrichi; *capsulæ figurâ et structurâ interiori* Dawsoniæ *similis; peristomio ab utroque genere diversissimus.*

---

[1] Musci Exotici, vol. i. 17.

LYELLIA CRISPA.

DESCRIPTIO. *Muscus* cæspitosus.

Caulis erectus, simplicissimus, 3-4-uncialis, ipsa basi tomento radicali cinereo copioso tenuissimo tectus, dein, ad $\frac{1}{5}$ circiter longitudinis, basibus emarcidis foliorum squamatus, supra dense foliatus.

Folia undique versa, e basibus dilatatis subcuneatis semivaginantibus membranaceis pallidis imbricatis, subulata, canaliculata, nigro-viridia, opaca; marginibus ab apice ad $\frac{2}{3}$ longitudinis et ipso apice carinæ serratis; disco intus longitudinaliter lamellis numerosis, parallelo-approximatis, tenuissimis, e nervo ipsaque superficie ortis; limbo elamellato minutissime areolato; madore patula leviterque introrsum falcata, siccitate contorta.

Masculi Flores non visi.

Fructificatio Feminea terminalis, solitaria.

Vaginula cylindracea, villis implexis instructa, apice truncato simplici.

Seta sesquiuncialis—biuncialis, erecta, teres, lævis, castanea, demum cava.

Calyptra (nonnullæ delapsæ solum a nobis visæ) cucullata, hinc altè fissa inde truncata, lævis, apice pilis brevibus simplicibus hispidula.

Capsula erectiuscula, circumscriptione ovata, fusca, vix manifeste areolata, hinc plana et ala perangusta cincta, inde convexiuscula, collo brevissimo cylindraceo. *Apophysis* nulla nisi *basis* castaneo-fusca et undique instructa punctis parvis sparsis numerosis, pustuliformibus, verticaliter ellipticis, margine paulo incrassatis, disco angusto, porum referente [563 sed laminam tantum exteriorem perforante.

Operculum (unicum tantum visum quod calyptrâ delapsâ inclusum) e basi depresso-conicâ desinens in rostrum longitudine circiter ipsius baseos, intus auctum processu cylindraceo, centro baseos inserto, et proculdubio disco circulari terminali columellæ applicito.

Peristomium horizontale, nec obliquum, clausum quasi operculo interiori seu *epiphragmate* crasso, opaco, edentulo,

planiusculo, persistente; limbo latiusculo crassiore castaneo; disco pallido leviter depresso; ipso centro circulari plano, crassiusculo, fusco, a disco pallido mox separante, arcte cum columella cohærenti, eaque demum abbreviata intra cavitatem retracto.

Membrana interior (s. Theca vera) approximata exteriori, quacum processubus numerosis vasculiformibus connexa, ore coarctato, spongioso-membranaceo, collum breve columellæ arcte amplexante, superficie interiore altè corrugata.

Columella in capsula matura majuscula, subovalis, lacunosa, rugis elevatis applicitis et forsan connexis plicis respondentibus membranæ interioris.

Semina minutissima, in cumulo viridia, separatim hyalina, lævia.

Lyellia crispa was lately discovered in Nepaul (probably in the vicinity of Kathmandu,) by the botanical collectors sent from the Company's garden at Calcutta, by Dr. Nathaniel Wallich, the worthy successor of Dr. Roxburgh in that establishment.

The specimens here described were received from Dr. Wallich by Sir Joseph Banks; and I have also seen others sent at the same time to Mr. Lambert, part of which he very liberally communicated.

564] The whole number of capsules examined does not exceed twenty-five; but as all of these were ripe and of uniform appearance and structure, they will probably be considered sufficient for the establishment of the genus.

To complete the description of *Lyellia*, male flowers, which, however, probably resemble those of *Polytrichum* and *Dawsonia*, are still wanting; and although there is no reason to doubt that the calyptra and operculum, both of which I have ventured to describe from fallen specimens, really belong to this species, yet it would be more satisfactory to find them while still attached to the capsule; for in this state only the form of the operculum and its probable central connection with the orbicular disk of the peristomium can be absolutely determined. It will be necessary also to examine a greater number of specimens, and perhaps in different states, to ascertain absolutely the œconomy of this moss in the dispersion of its seeds. It is evident, however, if the description already given be correct, that as far as dispersion takes place, by the mouth of the capsule, it can only be effected by a contraction or shortening of the columella, and a corresponding retraction within the cavity of the capsule, of the central portion of the peristomium which adheres to it; and in this state several of the specimens were actually found.

But it is also manifest, both from the great size of the columella, and its numerous points of connection with the inner membrane, that in this way the whole of the seeds cannot be discharged. It is possible therefore, that in certain circumstances at least, their dispersion may be assisted by the minute pores existing at the base of the capsule. These pores, in the specimens examined, were found to penetrate the outer membrane, or even its external layer only, and being situated below the origin of the seminal bag, their first effect will probably be to accelerate the decay of the internal spongy texture of the base of the [566 capsule. But by thus removing support from the columella and inner membrane, they may contribute to the greater shortening of the former, and consequently in increasing the dispersion by the mouth of the capsule; or, from the same cause, the inner membrane being at length ruptured, the seeds may be in part discharged by the pores themselves.

It seems then not improbable, from what we at present know of the structure of *Lyellia*, that for the dispersion of the seeds in this genus there are two distinct contrivances, both of which, however, in the only species yet known, are apparently imperfect. But hence it is perhaps allowable to conjecture, that either other species of *Lyellia*, or a nearly-related genus may exist, in which while the mouth of the capsule remains absolutely shut, the pores of the base may be sufficiently enlarged for the complete performance of this important function.

Pores exactly resembling those of *Lyellia crispa* have not hitherto been found in any other moss. I have observed, however, in several specimens of *Polytrichum alpinum* still more minute pustules, not very different in appearance, and similarly situated on the base of the capsule.

In establishing this new genus of Mosses, it is of importance to determine its more intimate affinities in the family to which it belongs. Its place is unquestionably between *Polytrichum* and *Dawsonia;* and it will I believe be admitted, that these three genera, in the natural method, cannot be separated; though they will necessarily form or be referable to distinct sections of an artificial system founded chiefly on modifications of the peristomium.

In attempting to discover characters by which this group of POLYTRICHOIDEÆ may be distinguished from other Mosses, it is in the first place necessary to determine the whole structure of *Polytrichum;* for this genus, though one 566] of the most common of the order, and, from the great size of the capsules in many of its species, most readily admitting of accurate observation, has never yet been thoroughly examined.

One of the most striking characters of *Polytrichum* is the dense texture and consequent opacity of the leaves; in which it agrees with the other two genera of the section. This character, however, is not altogether confined to *Polytrichoïdeæ,* and is wanting in *Polytrichum undulatum* and *angustatum*. But the lamellæ of the upper surface of the leaves probably exist, though in very different degrees, in all the species of *Polytrichum;* are equally observable in *Lyellia* and *Dawsonia;* and I am not aware that they have been found in any other genera of the order.

These lamellæ, which are represented in several of the species figured in *English Botany,* by Wahlenberg in *P. lævigatum,*[1] and since noticed by Messrs. Hooker and Taylor[2] as existing in nearly the whole of the genus, do not belong to the nerve only, as the authors of *Muscologia Britannica* seem to suppose, but in several species cover the greater part of the surface of the upper or spreading portion of the leaf; the sheathing base being either entirely destitute of them, or having them much less developed and strictly confined to the nerve.

---

[1] Flora Lappon. tab. 22.

[2] Muscol. Brit. p. 24.

In the form and position of the male flowers there is probably an absolute uniformity in the whole of this group: but the only peculiarities consist in the perigonial leaf or bractea being formed chiefly of the sheathing part of the stem-leaf; and in the new shoot proceeding from the centre of the star-like cluster. In *P. undulatum*, however, the former character is by no means obvious, and the latter is not perhaps constant; and both are only presumed to exist in *Lyellia*.

The double calyptra of *Polytrichum*, long considered as the essential character of the genus, equally exists in [567 *Dawsonia*. But this outer or spurious calyptra, formed of densely matted hairs originating from the vaginula and the apex of the inner cucullate calyptra, is wanting in several species of *Polytrichum*, in some of which, and in *Lyellia*, the true calyptra is furnished with a few hairs only, either scattered over the whole of its surface, or confined to its apex; while in others, as in *Polytrichum undulatum*, it is nearly, and in *P. magellanicum* and *lævigatum*, entirely smooth.

Respecting the teeth of the peristomium of *Polytrichum*, I have very little to add, except that in *P. magellanicum* they appear to be eighty in number, which is a higher multiple of sixteen than has hitherto been noticed in this genus, and the greatest number that has yet been found in a single series in the order.

On the nature of the transverse membrane or tympanum of *Polytrichum*, I have formerly made some remarks in treating of *Dawsonia*, and have there considered it as the remains of the pulpy continuation of the columella, originally occupying the cavity of the operculum. But its uniform texture, as well as its exactly circular form and equal margin remain to be accounted for; unless this regularity may be supposed to depend on the circular, and apparently corresponding, aperture of the inner membrane.

Most authors have described the tympanum of *Polytrichum* as minutely perforated. These pores I have never been able to detect; but I observe in many cases an appearance which may perhaps account for the belief in their existence, namely a minute reticulation on the outer surface of the membrane, apparently owing to the corresponding areolæ of the inner surface of the operculum, with which it was originally in contact.

Polytrichum is remarkable for the various forms of its capsule. Those species, indeed, in which it is quadrangular have been considered as a distinct genus by Mons. de
568] Beauvois. But unless this difference of external form should be found connected with others, either in the habit or in the internal structure, which I believe is not the case, it seems hardly sufficient to justify the subdivision of so natural a genus.

The symmetrical quadrangular capsule, admitting of a regular cylindrical inner membrane, is a character of inferior importance to the plano-convex or dimidiate capsule, which almost necessarily implies, and in *Dawsonia* and *Lyellia* at least is found to be connected with, a corresponding irregularity in the figure of the cavity; and hence I have introduced this remarkable form into the characters of both these genera.

On the structure of the inner membrane of the capsule in *Polytrichum* the only observation that I have met with occurs in *English Botany*, where, in the account of *Polytrichum subrotundum* (plate 1624), it is stated that Mr. James D. Sowerby has discovered, in this species as well as in *Polytrichum undulatum*, a real membranaceous peristomium within the teeth, which, according to Sir James Smith, "gives quite a new idea of the generic character."

This inner peristomium, if it may be so termed, which is well represented in the figure referred to, and consists of a horizontal projection of the inner membrane immediately below its apex, will, I believe, be found to exist in all the species of the genus, and in some cases reduces the aperture of the inner capsule to half the size of the outer at the origin of the teeth. It is always, however, quite entire, and, according to my observations, is formed of a doubling of the inner membrane, with a loose cellular or rather spongy substance interposed between the lamellæ.

Besides this transverse annular projection there are in the inner membrane of all the species of *Polytrichum* that I have examined, *P. undulatum* alone excepted, four longitudinal [569 equidistant processes, extending from the aperture to the base of the capsule; and in many species projecting so far into its cavity as to come in contact either with the salient angles or sides of the columella, and consequently to subdivide it into a determinate number of cells.

The analogy of these longitudinal processes with the more numerous and irregular plicæ in *Dawsonia* and *Lyellia* is obvious; and I have not myself met with similar processes of the inner membrane in any other genus of mosses. They do not, however, afford an absolutely distinguishing character of this group, as they seem to be altogether wanting in *Polytrichum undulatum;* and Hedwig, it must be admitted, has represented an apparently analogous structure in *Gymnostomum pyriforme.*[1]

The quadrangular or four-winged columella of *Polytrichum commune* is well figured and described by the accurate Schmidel[2]; and I have found an equally regular form of this body in most of the species of *Polytrichum* that I have examined; though in many it is less evidently winged than in *P. commune* and the species nearly related to it.

Mons. de Beauvois seems to consider the alæ of the columella as themselves forming complete septa, and also that in this state they exist only in such species as have quadrangular capsules; for to these he limits his genus *Polytrichum,* distinguished by him from *Pogonatum* by its multilocular fruit. The cavity, however, is completely subdivided in several of the species with cylindrical capsules, as in *P. urnigerum,* and in a new species very nearly related to it (*P. microstomum,* nob.) lately received from Dr. Wallich: and the alæ of the columella, as far as I have observed, never form complete septa, at least in the ripe fruit; though [570 in those species having quadrangular capsules they nearly reach the parietes opposite to the external angles, towards which they are directed.

---

[1] Fundam. Hist. Nat. Muscor. Frond. pars ii. tab. 2, β.

[2] Icones pl. p. 236, tab. 59, fig. 15.

As the columella of *Polytrichum* retains its regular form in the ripe capsule, its real structure may even then be in a great measure determined. In this stage I find its wings, or compressed sides, to consist of a double membrane with an intermediate spongy substance, in which there is no appearance of granules; and the internal denser substance of the axis is equally free from granular matter. But as there is no indication of lateral rupture, the sides in several species remaining perfectly smooth, nor of any central cavity, this structure affords a powerful argument in refutation of those hypotheses which assume the existence of two kinds of granules in the capsules of mosses; the one produced in the cavity formed by the internal membrane, the other in the substance or supposed cavity of the columella itself; the latter being considered as seeds in one of the hypotheses,[1] and in the other as pollen.[2]

This argument, however, is not here advanced to disprove the existence of two kinds of granules in the capsules of mosses, but merely against their production in the distinct cavities assigned to them in the hypotheses referred to.

In the greater number of *Polytricha* as well as in *Lyellia* and *Dawsonia* the seeds are extremely minute; a fact with which the increased surface for their production is probably connected: for in *P. undulatum,* where the seeds are larger than in most other species of the genus, this increased surface does not exist: and in *P. lævigatum,* where they are of still greater size, the plicæ of the inner membrane are probably also wanting.

571] Although there is but little resemblance in the structure of the peristomium among the different genera of *Polytrichoïdeæ,* they may still be said essentially to agree in the function of this part: for in all of them the complete separation of the seeds is ensured by the smallness of the apertures for their discharge. It may be remarked, that the necessity for this complete dispersion in Mosses seems to be inversely as the size of the seeds. For in those genera of the order in which the capsule either bursts irregularly or has a naked mouth, the seeds are in general larger than in those with a single, and still more manifestly than in those with a double, peristomium. And in conformity with this also, in *Polytrichum undulatum* and *lævigatum* the tympanum is sooner ruptured or removed than in the other species of the genus.

---

[1] Palisot Beauvois, Ætheog. p. 5.

[2] Keith, Physiol. Bot. ii. p. 346.

The result of this comparison of *Polytrichum* with *Lyellia* and *Dawsonia*, although it confirms the propriety of their approximation, does not afford any clearly distinguishing mark for the very natural section of the order which these three genera form. In the mean time, however, it may be circumscribed, though not with absolute precision, by a combination of the more general characters which have been now enumerated.

LEPTOSTOMUM.

In defining this genus, which was first proposed in my former paper on Mosses[1], I relied chiefly on the undivided annular projection of the inner membrane of the capsule. I was induced to employ this modification of the peristomium as a character, though certainly far from being obvious, in finding it to exist in several mosses of the southern hemisphere, having a similar and peculiar habit: and which, had it been neglected, I must have referred to *Gymnostomum*, with the greater number of whose species they have hardly anything in common.

Mr. Hooker, however, has since found, as he states, [572 the same structure in several other mosses, generally considered as having a naked peristomium, particularly in *Gymnostomum microstomum*, *Griffithianum*, and *fasciculare;* and as these species have but little resemblance to each other, and still less affinity to *Leptostomum*, he has reduced this genus also to *Gymnostomum*.

If the statement referred to be correct, *Leptostomum*, though it may be a natural genus, must be given up, until other marks shall be found by which it may be distinguished. I have not had specimens sufficiently perfect to enable me to judge of the structure of all the species of *Gymnostomum* mentioned by Mr. Hooker. In one of them, however, *Gymnostomum microstomum*, the peristomium is certainly very different from that of *Leptostomum*. In this species I find, on removing the operculum, that the mouth of the capsule is not only completely covered by a horizontal membrane, but that this covering is derived from the outer membrane of the capsule, and consequently differs in origin as well as in form from the peristomium which it has been said to resemble. Its central portion, however, being extremely thin is soon ruptured and deciduous, and in this state only it has been seen by the authors of the *Muscologia Britannica*.

---

[1] [*Vol. i, p.* 352.]

Gymnostomum microstomum therefore may itself be considered as a distinct genus, to which the name of *Hymenostomum*[1] may be given; and it is worthy of remark, that in its technical character it approaches most nearly to *Lyellia*, though no two mosses differ more widely in almost every other respect.

573] From the account given of *Gymnostomum Griffithianum* it appears that this species also has in the early stage a membrane completely covering the mouth of the capsule. But this membrane probably differs in origin, at least, from that of *Hymenostomum*, as it seems to do both in form and dehiscence from the peristomium of *Leptostomum*.

Of *Gymnostomum fasciculare* I have examined only imperfect specimens, I cannot therefore speak with confidence of its structure. The annular process, however, mentioned by Mr. Hooker is more likely to be the remains of a complete horizontal covering, and probably originating from the inner membrane, than to resemble the peristomium either of

---

[1] HYMENOSTOMUM.

Fl. Fem. terminalis.

Stoma edentulum, clausum *epiphragmate* (e membrana exteriore orto), *disco* tenuissimo (a columella libero) mox rupto et evanido; *limbo* persistenti horizontali indiviso.

Calyptra dimidiata,. lævis.

Fl. Mas. terminalis, gemmiformis.

Hymenostomum or *Leptostomum*. A membrane of this kind is certainly present in some species of *Gymnostomum*, and perhaps may be found in all those that really belong to that genus. It exists also in *Weissia Templetoni*, which so closely resembles *Gymnostomum fasciculare* as to be with difficulty distinguished from it, unless by the inspection of the peristomium; and, in addition to the erect annular peristomium from which the character of the genus is taken, I have observed a similar membrane in *Leptostomum* itself. It seems even to be not an uncommon process or termination of the inner membrane, though it has been remarked only in some of its more obvious and persistent modifications. Thus the spongy membrane figured and described in the two published species of *Calymperes*, seems to be an analogous structure,[1] as is also the circular disk terminating the columella in several species of *Splachnum*; [674 and perhaps even the tympanum of *Polytrichum* may be of similar origin.

But these characters of *Leptostomum* and *Hymenostomum*, though they do not appear to have been yet observed in any other mosses, may still perhaps be considered too minute for generic distinctions: and it must be admitted that were nothing to be obtained but the subdivision of an extensive natural genus it could not be necessary to have recourse to them. The divisions in question, however, are certainly not of that kind.

The weakest part indeed of Hedwig's system is its bringing together all those mosses that have a naked peristomium, and even including the greater part of them in the genus *Gymnostomum*; while many of the species so associated are in real affinity much nearer to several other genera of the order having a simple or even a double peristomium.

---

[1] The circular spongy membrane covering the mouth of the capsule certainly does not form an essential part of the character of *Calymperes*; for, in the only species that I have examined, it is either entirely wanting, or firmly adheres to the inner surface of the operculum, along with which, also, a considerable portion of the columella separates. Nor has Swartz, who established the genus (in *Spreng. Schrad. und Link Jahrb. der Gewäch.* vol. i, p. 1) even noticed this membrane in his description.

Thus *Gymnostomum microstomum*, the *Hymenostomum* of the present paper, has less the habit of the genus in which it is placed than of *Weissia*, to some of whose species, especially *W. affinis* and *trichodes*, it seems to approach even in the structure of its peristomium.

Several species of that section of *Gymnostomum*, to which perhaps the genus should be limited, especially *G. fasciculare*, *Bonplandii*, and *Rottleri*, can hardly be distinguished from *Weissia Templetoni*.[1]

575] *Gymnostomum* or *Anictangium pulvinatum* agrees in every other part of its structure with *Grimmia*.

Gymnostomum lapponicum, notwithstanding the difference of calyptra, may be considered as related to *Grimmia Daviesii*, and consequently to *Orthotrichum*, which *G. Daviesii*[2] resembles in its teeth being approximated in pairs.

Gymnostomum viridissimum has exactly the habit and calyptra of *Zygodon*.

Gymnostomum pennatum (*Schistostega* of Mohr,) in one remarkable character may be compared with *Fissidens*.[3]

---

[1] *Weissia Templetoni*, along with a nearly related species found in New Holland, *Funaria minor* of Delile (*Flor. Ægypt.*), and perhaps also *Weissia radians*, may form a genus distinct from *Weissia*, and nearly related to *Funaria*, differing chiefly in the irregular bursting and evanescence of the inner peristomium, which in *Funaria* is regularly divided and generally persistent, though in some cases perhaps equally deciduous. In a variety of *Weissia Templetoni*, or a very nearly related species, collected in 1800 in the county of Donegal, I have observed the outer peristomium to be not unfrequently wanting, even before the separation of the operculum; a fact which, if hereafter confirmed, would establish its affinity to *Gymnostomum fasciculare*.

[2] *Griffithia Daviesii* nob.

[3] As Schkuhr (in *Krypt. Gewäch.* ii, p. 31, t. 12) has ascertained that the operculum of *Gymnostomum pennatum* separates entire, the genus *Schistostega* must be again reduced to *Gymnostomum*, until other distinguishing characters are discovered.

Its resemblance to *Fissidens* consists in the somewhat similar disposition of leaves.

In *Fissidens*, as limited by Bridel, (*Muscol. Nov.* p. 186) the leaves are universally described as presenting their margin instead of their disk to the stem, and as having a doubling of the lower half of their inner or upper margin, extending as far as the nerve.

On this view Bridel (in *l. cit.*) has formed a separate section of the order, consisting of *Fissidens* and *Octodiceras;* and hence also M. de la Pylaie has changed the name of *Fissidens* to *Skitophyllum*. (*Journal de Botan. Appliq.* iv, p. 133.) It seems to me a much simpler explanation of the apparent anomaly to consider the supposed doubling or division of the leaf as its true disk, and

Anictangium aquaticum is evidently related to *Cinclidotus* or *Trichostomum*.

Gymnostomum julaceum and *Hedwigia secunda* of Hooker resemble certain species of *Pterygynandrum, Neckera* and *Leskea*.

An unpublished moss (*Glyphocarpa capensis*) with a naked peristomium, which I observed on the Table Mountain of the Cape of Good Hope has the spherical [576 striated capsule as well as the inflorescence and ramification of *Bartramia:* and with this genus also *Anictangium Humboldtii* agrees in its capsule, though its habit is that of *Leskea* or *Hypnum*.

Drepanophyllum of Richard (*Dicranum? falcifolium* of Hooker,) in form and disposition of leaves is related to *Fissidens* and *Neckera*.

Calymperes approaches to *Orthotrichum*, or rather, perhaps, to *Schlotheimia* or *Macromitrium*.

Lyellia, which belongs to the same division of the artificial system, is evidently allied to *Dawsonia* and *Polytrichum*.

And lastly, *Leptostomum*, the genus more particularly under consideration, appears to me most nearly related to *Bryum;* with which indeed its affinity would be completely established, were Hedwig's account of the peristomium of *Bryum macrocarpum* proved to be correct.

To the observations now made on the various affinities of mosses which agree in having a naked peristomium, it may be added, that the genera with a simple peristomium do not form a strictly natural series, several of them being much more nearly related to those in which the peristomium is double than to each other.

But if the correctness of these statements be admitted, it follows that, in many cases to obtain natural genera in this order either additional sources of distinction must be

---

the deviation from the usual structure as consequently consisting in the greater compression of the leaf, and in the addition of a dorsal and terminal wing. In support of this view it may be observed, that in the lower leaves of the stem both the additional wings are greatly reduced in size, and in some cases entirely wanting, as they universally are in the perigonial leaves, which have likewise the more ordinary form, being moderately concave and not even navicular.

sought for, or those at present in use more minutely investigated.

Of additional characters, which in some cases may be employed with advantage, I shall merely advert to the membranes of the capsule being distinct or contiguous, and to that more intimate union where there seems to be a single membrane only; to the modifications of internal structure of the inner membrane; the differences in form and duration of the columella, or even its being entirely wanting in the ripe capsule; the presence or absence of 577] the annulus; and the insertion, form and relative position of the male flowers, which, though always considered of importance by Hedwig, many of the most distinguished muscologists of the present day entirely exclude from the characters of their genera.

With respect to the principal source of generic distinctions, the Peristomium, in addition to the circumstances generally attended to, namely, the origin, number, direction, form, and actual division of the teeth, it may be of some importance to ascertain their æstivation, which, though very generally, is not always valvular: and especially to mark the existence or want of the *longitudinal striæ* or semi-pellucid lines; for these, if they do not prove the compound nature, at least clearly indicate a tendency to division in the teeth where they are found; division being always in the course of the striæ, and in no instance taking place unless where they are present.

But in considering them, which I am inclined to do, as proving composition or confluence of the teeth, it would appear that there is a much greater uniformity in the structure of the simple or outer peristomium, at least, than is generally admitted; and that the prevailing number of teeth in this series is thirty-two; though by a coalescence, more or less complete, they are frequently reduced to sixteen, in some cases to eight, and in a few even to four.

According to this view, a single longitudinal line in the axis of a tooth indicates the confluence of two teeth; three equidistant lines, one being central, the coalescence of four; and seven lines similarly disposed that of eight.

Nearly the whole of these modifications exist in that natural subdivision of the order, which may be named *Splachneæ*, consisting of *Splachnum, Systylium, Tayloria* (*Hookeria* of Schwaegrichen), *Splachnum squarrosum* of Hooker, and *Weissia splachnoides.*

578] The number of teeth in SPLACHNEÆ is thirty-two, which, however, are never entirely distinct and at the same time equidistant, but approximated or united in various degrees in the different genera and species of the section.

Thus in *Tayloria* and *Systylium* the thirty-two teeth are distinct and disposed in sixteen pairs.

In *Splachnum rubrum* and *luteum* there are apparently only eight pairs, each tooth, however, having a pellucid and obscurely-perforated axis. In almost all the other genuine species of *Splachnum* there is the same disposition as in *S. rubrum* and *luteum ;* but the pellucid axis of each tooth is less distinct and imperforated.

In *Splachnum angustatum*, and I believe also in a second species nearly related to it, the arrangement is somewhat different ; for the sixteen apparent teeth are approximated, and at the base even united in fours, the pellucid axis of each tooth being still less obvious. Hence these species in their peristomium very nearly approach to *Tetraphis,* to which they would be absolutely referable were the union complete.

In *Splachnum squarrosum* the apparent number of teeth is eight, without any actual subdivision. But as each tooth has three equidistant pellucid lines, of which the lateral are nearly as distinct as the central, there can be no doubt that the composition is the same here as in the rest of the section.[1]

---

[1] In a late number of *Musci Exotici,* (No. 17, tab. 136,) *Splachnum squarrosum* is transferred to *Octoblepharum,* and, on the authority of M. de Beauvois, is stated to be *Octoblepharum serratum* of Bridel. Mr. Hooker, however, continues to refer it to this genus, on the supposition of its agreeing with the original species in the form of its calyptra : observing that if this should prove not to be the case, it ought to be separated, under the generic name *Orthodon,* formerly given to it by its discoverer M. Bory de St. Vincent.

The calyptra of *O. albidum* is represented as distinctly cucullate, both by Swartz (in *Obs. Bot.* tab. xi, fig. 1) and M. de Beauvois (in *Flore d'Oware,* i, tab. 31). I have also observed it of the same form in specimens from Madagascar. There seems, therefore, no reason to doubt that these two

579] By these lines also *S. squarrosum* is readily distinguished from *Octoblepharum*, in which the apparent number of teeth is the same: for in *Octoblepharum* each tooth has only a single pellucid line; and hence its affinity to certain species at present referable to *Weissia*, with a nearly similar habit and sixteen distinct teeth, whose axis is not perceptibly pellucid.

Weissia splachnoides differs from the other *Splachneæ* in having sixteen equidistant teeth; but as these teeth, according to the indication of the pellucid axis, are double, the arrangement may be compared with that of *Tayloria* and *Systylium*, in which the separation into thirty-two is complete, and the sixteen pairs equidistant. It agrees, however, also in this respect with *Grimmia* and with several species of *Weissia*: but in other important characters, as well as in habit, it is evidently related to *Splachnum*, and offers perhaps one of the best examples of the importance of the male flowers in distinguishing natural genera.

Even *Tetraphis pellucida* may be cited in proof of the same prevailing number in the peristomium; each of its four teeth, when highly magnified, appearing to have seven longitudinal striæ, which, according to this test, would make the real number thirty-two; a structure contributing to fix the place of *Tetraphis* in the natural series between *Splachnum* and *Orthotrichum*.

580] Better evidence on the same subject is afforded by *Trichostomum*, *Didymodon*, and *Leucodon*, in all of which the thirty-two teeth are distinct, though approximated in pairs; by the sixteen bifid teeth of *Dicranum* and *Fissidens*; and by the like number of teeth with a perforated axis in *Trematodon*, *Weissia nuda*, *Didymodon latifolium*, and several species of *Grimmia*.

mosses differ materially even in this part of their structure; and as other differences, of at least equal importance, also exist, both in the peristomium and male flowers, *Octoblepharum serratum*, whose habit is nearly that of *Splachnum*, may be distinguished both from that genus and from *Octoblepharum* by the following characters.

ORTHODON.

Fl. Fem. terminalis.

Peristomium simplex, octodentatum, dente singulo striis tribus longitudinalibus instructo (ideoque e quatuor coalitis composito).

Calyptra mitriformis (4-fida, pilosa).

Fl. Mas. terminalis, discoideus.

In all the genera having a double peristomium I believe the pellucid axis more or less manifestly exists; but in these genera there is a great uniformity in the apparent number of teeth in the outer peristomium; there being no instance of actual division in this series beyond sixteen, or of a further approximation, unless in *Orthotrichum*, in several of whose species the approximation or even union of the double teeth by pairs takes place, while in a few others the sixteen teeth are slightly divided at the apex, and in the whole genus the pellucid axis is remarkably distinct.

The only exceptions to the actual division into thirty-two, or the structure indicating that number, in the simple peristomium of Mosses, occur on the one hand in certain species of *Weissia*, perhaps in *Encalypta* and in *Octoblepharum*, in all of which, I believe, there is a reduction to sixteen: and on the other in *Polytrichum*, where the number is frequently increased, varying in the different species, and chiefly by multiples of sixteen, from thirty-two to eighty. In this genus also, whatever the number may be, the teeth never have a semipellucid, but rather an opake or thickened axis, and no tendency to union or even approximation is observable. The constant equidistance of the teeth of *Polytrichum* seems to be connected with its peculiar mode of dissemination; for as this takes place through the interstices of the teeth, and as complete separation of the seeds seems necessary on account of their extreme minuteness, a reduction in number and consequent increase of size of these apertures would probably, in some degree, prevent dis- [581 persion, while the unequal distances of the teeth might either produce a deviation from the regular figure, or an early rupture, of the tympanum, which forms an essential part in this economy.

BUXBAUMIA.

In my former paper[1] I have proposed to preserve the genus *Buxbaumia*, as established by Schmidel; and in constructing a character to comprehend both species, I entirely rejected the outer peristomium of Hedwig; and having also adopted his opinion respecting the middle peristomium of *B. aphylla*, which he has termed corona, and considered as analogous to the annulus in many other mosses, it became unnecessary to advert to this part in defining the genus.

---

[1] [*Vol. i, p.* 351.]

Mr. Hooker has since published an excellent analysis of both species, and has followed Ehrhart and Mohr in regarding them as forming distinct genera.

This determination I have now no hesitation in adopting; for, whatever the nature of Hedwig's corona may be, it affords at least an obvious character, and is connected with other differences of sufficient importance to justify the separation; though the two genera must always remain in the same natural section of the order.

The observations that follow belong, therefore, solely to *Buxbaumia aphylla*.

My first remark on this plant relates to its peristomium, on the nature of which, as compared with that of other mosses, at least two different opinions may be formed.

According to one of these, the outer peristomium of Hooker may with Hedwig be considered analogous to the fimbria or annulus existing in many other mosses; and the 582] principal objection to this view would perhaps be obviated by rejecting the outer peristomium of Hedwig, as I have formerly proposed, and which Mr. Hooker has since done; as there would then be nothing either in the origin or texture of this part essentially at variance with the supposition; the principal remaining difference being its greater length; for the cilia of the peristomium of *Buxbaumia* may be compared with the striæ or divisions existing in the annulus, which seem to be equally determinate in number, and in some cases also disposed in a double series.

On the second supposition, the peristomium of *Buxbaumia* originating entirely from the outer membrane, may, though consisting of several and even of dissimilar series, be regarded as analogous to that portion of the pencil of *Dawsonia* which arises from the same part of the capsule. This analogy is suggested by Mr. Hooker, and is confirmed by a circumstance that he does not seem to have noticed, namely, that his outer peristomium, the corona of Hedwig, consists of a double series of cilia. The number of cilia in each series exceeds sixteen, but hardly amounts to thirty-two; it probably, however, corresponds with that of the plicæ in the membranaceous peristomium.

We have here then a passage from a number still perhaps definite, though disposed in a triple series, to the indefinite number peculiar to, and so striking in, *Dawsonia.*

My second observation relates to the inner membrane of the capsule, of which I find the mouth to be quite entire and open, though before the separation of the operculum it is closed by the terminating process of the columella. Hence *Buxbaumia* has some resemblance to *Polytrichum*, and a still greater to *Lyellia,* in this part of its structure.

Buxbaumia aphylla is the only moss considered as being entirely destitute of leaves; and though it has been oftener and more fully described than any other plant of the [583 order, from the monographs of Linnæus and Schmidel to the excellent illustration recently published by Mr. Hooker, there is no difference of opinion on this point. I have lately ascertained, however, that *Buxbaumia aphylla* is always furnished with perfect leaves, which more nearly resemble, both in texture and division, those of a *Jungermannia* than of any species of moss properly so called; and consequently are widely different from those of *Polytrichoïdeæ,* to which this genus is in several respects related.

The leaves in the barren plant, where I first observed them, are lanceolate and but slightly divided. Those at the base of the female perichætium are even broader than the former, but more deeply cut, both laterally and at top, into several capillary segments; while the leaves which proceed from the surface of the perichætium are still more deeply divided, and their segments so much elongated that the minute foliaceous base has been universally overlooked, and the perichætium consequently described as covered with hairs.

REMARKS ON THE STRUCTURE AND AFFINITIES OF CEPHALOTUS.

BY

ROBERT BROWN, Esq., F.R.S., &c.

[*Extracted from the 'London and Edinburgh Philosophical Magazine,' Vol. I, pp.* 314—317.]

LONDON.

1832.

314

ON THE STRUCTURE AND AFFINITIES OF CEPHALOTUS.

In the Botanical appendix of Captain Flinders's Voyage to Terra Australis,[1] a figure and description of *Cephalotus follicularis* are given, in some respects more complete than those of M. Labillardière, by whom this remarkable plant, a native of the south-west coast of New Holland, was first published. Both accounts, however, are equally imperfect with regard to the fruit; and my principal object in the present communication is to supply that deficiency.

My earliest knowledge of the ripe fruit of Cephalotus was obtained from a single specimen, sent in 1815 by M. [315 Leschenault, who had found the plant in February 1803 near the shores of King George's Sound, where I had gathered it in a less advanced state in the beginning of January 1802.

I have, however, more recently, received numerous specimens with ripe seeds from Mr. William Baxter, who collected them also at King George's Sound in 1829.

Cephalotus was introduced in 1823 from the same place by Capt. King, into His Majesty's Botanic Garden at Kew, where it flowered repeatedly, and ripened seeds from which several plants have been raised. A figure of one of these with expanded flowers, but still without fruit, has lately been published by Dr. Hooker in the Botanical Magazine; and a plant brought also from King George's Sound in 1829 by Mr. William Baxter is now in flower in Mr. Knight's nursery.

The following account of the ripe fruit will serve as a

---

[1] [*Vol. i, p.* 76, *t.* 4.]

supplement to the description of the plant which I have given in the work referred to.

Akenia membranacea, insecta parva alis conniventibus quodammodò referentia, perianthio parùm aucto staminibusque persistentibus cincta, iisque sesquilongiora, ferè distincta, ipsâ basi, ubi receptaculo communi inserta, post separationem intùs aperta ibique e membranâ simplici crassiusculâ imberbi nitente formata; suprà clausa et e duplici membranâ conflata; harum exterior densè barbata, pilis longis, strictis, acutis, deflexis, stylo persistenti brevi arctè reflexo rostrata: membrana seu lamella interior tenuis, intùs quandoque dehiscens.

Semen unicum (rarissimè duo), basi cavitatis membranæ interioris insertum, oblongo-ovale, teres, funiculo umbilicali brevi juxta basin affixum. *Integumentum* duplex: *Testa* membranacea laxiuscula, *raphe* tenui laterali et apice *chalazâ* parvâ insignita: *Membrana interior* tenuis separabilis. *Albumen* semini conforme, album, carnosum, subfriabile, e materiâ oleosâ cum granulis minutis mixtâ constans.

Embryo parvus, in basi axeos albuminis, teretiusculus, albus, rectus, albumine 4—5ies brevior. *Cotyledones* breves, plano-convexæ. *Radicula* teres, basin seminis attingens.

Receptaculum commune fructûs: tuberculum centrale, parvum, brevissimum, subcylindraceum, cujus lateribus bases apertæ akeniorum adnatæ sunt, apice convexiusculo barbato.

From this description, especially of the embryo, it is evident that Cephalotus must be removed from Rosaceæ, to which it had been referred by M. Labillardière; and also, though not with much confidence, in the account which I published in 1814. M. de Jussieu, indeed, in 1818, 316] proposed to exclude it from Rosaceæ and append it to Crassulaceæ; and the structure of the seed, as well as of the folliculi or akenia, and even their insertion on the minute central receptacle or axis, may seem to confirm the correctness of this approximation.

Cephalotus, however, still appears to me sufficiently remote from every natural order at present established, to entitle it

(like Philydrum[1] and Brunonia[2]), now that its structure is completely known, to rank as a distinct family which may be called CEPHALOTEÆ, and which may be placed between Crassulaceæ and Francoaceæ; differing from both in being apetalous, in the valvate æstivation of the perianthium, and in many characters of inferior importance: from Crassulaceæ also in its minute embryo and more copious albumen: and from Francoaceæ in the absence of barren stamina and in the pistilla being monospermous and apparently distinct.

The most striking peculiarity of Cephalotus consists in the conversion of a portion of its radical leaves into Ascidia or pitchers. But as ascidia in all cases are manifestly formed from or belong to leaves, and as the various parts of the flower in Phænogamous plants are now generally regarded as modifications of the same organs, the question is naturally suggested, how far the form and arrangement of the parts of fructification agree in those plants whose leaves are capable of producing ascidia or pitchers. The four principal, and indeed the only genera in which pitchers occur, are Nepenthes, Cephalotus, Sarracenia, and Dischidia, and the few other somewhat analogous cases, consisting of the conversion of bracteæ or floral leaves into open cuculli, are found in Marcgravia and two other genera of the same natural family.

The only thing common to all these plants is, that they are Dicotyledonous.

It may also be remarked, that in those genera in which the Ascidia have an operculum, namely Nepenthes, Cephalotus, and Sarracenia, they exist in every known species of each genus, and the structure of these genera is so peculiar that they form three distinct natural families; while in Dischidia, whose pitchers are formed without opercula, these organs are neither found in every species of the genus, nor in any other genus of the extensive natural order to which it belongs.

The striking resemblance in most points of the Ascidia of

---

[1] Flinders's Voyage, vol. ii, p. 578 [*vol. i, p.* 53].

[2] Transact. Linn. Soc. vol. xii, p. 132 [*ante, p.* 310].

Cephalotus to those of Nepenthes, leads to a comparison in the first place of these two genera. But although both are apetalous, and in the parts of the flower deviate from the quinary or prevailing number in Dicotyledones, yet they 317] differ in so many other important characters that they cannot be considered as nearly related.

The place of Nepenthes in the natural series I have long since[1], in my account of Rafflesia, suggested to be near Aristolochiæ or Asarinæ, without, however, intending to include it in that family.

This approximation was adopted by M. Ad. Brongniart, who, however, went further, having absolutely referred Nepenthes to Cytineæ.

The union of plants so utterly unlike in appearance and œconomy, and so different, it may be added, in many of their most important characters, seems to have been generally regarded as somewhat paradoxical; and accordingly Professor Link, in 1829, has established Nepenthes as a section or tribe of Aristolochiæ, and Dr. Bartling and Mr. Lindley, in 1830, have considered it as forming a distinct natural family.

To the numerous and obvious distinctions between Cytineæ and Nepenthes may be added the no less important differences in their internal structure. For while Cytineæ, like most, perhaps all, other plants parasitical on roots, are destitute of spiral vessels, Nepenthes exhibits these vessels in the greatest degree of development and abundance, and also produces them in parts in which they are hardly to be met with in any other dicotyledonous plant.

Thus, in addition to the dense circle or stratum of spiral vessels existing in the stem between the outer parenchyma and the wood, they are found also singly or scattered in the pith, in the loose parenchyma situated between the wood and the bark, if it may be so called, even in the fibres of the root, and everywhere in the substance of the leaves, the pitchers, calyx and capsules. And between these solitary or scattered spiral vessels, which are often of considerable length, and those forming the stratum or circle externally bounding the wood and existing in the veins of the leaves, no essential difference in structure will I believe be found. In these points there is little resemblance between Nepenthes and Cephalotus, in the internal structure of which last there is nothing unusual.

---

[1] Transact. Linn. Soc. vol. xiii, p. 219 [*vol. i, p.* 386].

Between the parts of fructification of Nepenthes or Cephalotus and Sarracenia, there is still less analogy, and it is obviously unnecessary to compare in this respect any of these genera with Dischidia.

September 25th, 1832.

CHARACTERS AND DESCRIPTION

OF

LIMNANTHES,

A NEW GENUS OF PLANTS

ALLIED TO

FLOERKEA.

BY

ROBERT BROWN, Esq., V.P.L.S.

(Read at the Linnean Society, June 18th, 1833.)

LONDON.

1833.

CHARACTERS AND DESCRIPTION

OF

LIMNANTHES.

A paper was read, entitled "Characters and Description of *Limnanthes*, a new genus of plants allied to *Floerkea*," by Bobert Brown, Esq., V.P.L.S.

For specimens of the plant described the writer is indebted to the Horticultural Society, and to Mr. David Douglas, F.L.S., by whom it was recently discovered in California.

Mr. Brown was led more particularly to examine *Limnanthes*, from its resemblance to *Floerkea* of Willdenow, a genus which he had many years since investigated without being able to determine its place in the natural system. Examination proved these two plants to be so nearly akin, that they might perhaps be included in the same genus. They are here, however, separated, and the two genera are considered as forming a family distinct from all those at present known.

The place of this new family (Limnantheæ) is not absolutely determined; but it is suggested that in two remarkable points of its structure, namely, the presence of glands subtending the alternate filaments, and the existence of a gynobase, it more nearly approaches to Hypogynous families than to Perigynous, with which it has hitherto been associated.

The following are the characters of the Natural Order, and of the two Genera forming it.

LIMNANTHEÆ.

Flos completus, regularis. *Calyx* 3—5-partitus, æstivatione valvatâ, persistens. *Petala* 3—5, marcescentia. *Stamina* 6—10, insertione ambiguâ (hypo-perigyna), marcescentia. *Filamenta* distincta, 3—5 sepalis opposita basi extus glandulâ munita. *Ovaria* 2—5, sepalis opposita, cum *stylo* communi 2—5-fido mediante gynobasi connexa, monosperma; *ovulo* erecto, nucleo inverso. *Achenia* subcarnosa. *Semen* exalbuminosum. *Embryo* rectus; *radicula* infera.

Herbæ (Americæ septentrionalis, paludosæ) *glaberrimæ, alternifoliæ, exstipulatæ, foliis divisis, pedunculis unifloris, ebracteatis, apice dilatato basin turbinatam calycis simulante.*

Limnanthes.

Calyx 5-partitus. *Petala* 5, calyce longiora, æstivatione contortâ. *Stamina* 10. *Ovaria* 5.

Herba (Limnanthes Douglasii, Americæ occidentali-borealis) *foliis bipinnatifidis, pinnis suboppositis segmentis alternis.*

Floerkea. *Willd.*

Calyx 3-partitus. *Petala* 3, calyce breviora. *Stamina* 6. *Ovaria* 2 (raro 3).

Herba (Americæ orientali-borealis) *foliis pinnatifidis, segmentis indivisis.*

PART IV.

CONTRIBUTIONS TO SYSTEMATIC WORKS.

GENERA ET SPECIES

PLANTARUM CRUCIFERARUM,

NECNON GENERIS CLEOME,

QUÆ

IN HORTO KEWENSI COLUNTUR.

[*Extracted from 'Hortus Kewensis,' 2nd Edition, Vol. IV, pp.* 71—130.]

LONDON.

1812.

TETRADYNAMIA. [71

SILICULOSA.

CAKILE. *Gærtn. sem.* 2, *p.* 291.

Silicula biarticulata, articulis monospermis: superioris semine erecto sessili; inferioris (quandoque abortientis) pendulo.

1. C. *maritima*, articulis ancipitibus: superiore sagittato, foliis pinnatifidis subdentatis carnosis.
Cakile maritima. *Willden. sp. pl.* 3, *p.* 416.
Bunias Cakile. *Eng. bot.* 231.
Nat. of Britain. ⊙.

2. C. *perennis*, articulo superiore ovali ancipiti stylo longiore, foliis laciniato-pinnatifidis dentatis acutis.
Myagrum perenne. *Willden. sp. pl.* 3, *p.* 406. *Jacqu. austr.* 5, *p.* 7, *t.* 414.
Nat. of Germany. ♃.

3. C. *rugosa*, articulo superiore subgloboso rugoso stylo breviore, foliis obtusis dentatis; radicalibus sublyratis.
Myagrum rugosum. *Willden. sp. pl.* 3, *p.* 406.
Rapistrum rugosum. *Allion. pedem.* 1, *p.* 257, *t.* 78.
Nat. of the South of Europe. ⊙.

CRAMBE. *Gen. pl.* 1071. [72

Silicula articulo superiore subgloboso, semine inverso funiculo basi loculi inserto; articulo inferiore abortiente pedicelliformi.

1. C. *maritima*, filamentis longioribus bifurcis, silicula mutica, foliis subrotundis sinuatis undulatis dentatis glaucis cauleque glabris.
Crambe maritima. *Willden. sp. pl.* 3, *p.* 418. *Engl. bot.* 924.
Nat. of Britain. ♃.

2. C. *pinnatifida*, filamentis longioribus bifurcis, silicula mutica, foliis pinnatifidis: lobis oblongis dentatis cauleque glabris.
Crambe orientalis. *Jacqu. ic.* 1, *t.* 128.
Crambe suecica. *Mill. dict.*
Nat. of Siberia. ♃.

3. C. *orientalis*, filamentis longioribus bifurcis, silicula mutica, foliis sinuato-pinnatifidis dentatis scabris, caule glabro.
Crambe orientalis. *Willden. sp. pl.* 3, *p.* 418.
Nat. of the Levant. ♃.

4. C. *tatarica*, filamentis longioribus bifurcis, silicula mutica, foliis radicalibus decompositis: pinnulis dentato-incisis; adultis cauleque glabriusculis.
73] Crambe tatarica. *Willden. sp. pl.* 3, *p.* 418. *Jacqu. ic.* 1, *t.* 129.
Nat. of Hungary and Siberia. ♃.

5. C. *hispanica*, filamentis longioribus bifurcis, silicula mutica, foliis pinnato-lyratis scabris: foliolo terminali reniformi obtuso.
Crambe hispanica. *Willden. sp. pl.* 3, *p.* 419. *Schkuhr handb.* 2, *p.* 292, *t.* 189.
Nat. of Spain. ⊙.

6. C. *fruticosa*, filamentis longioribus bifurcis, silicula stylo mucronata, foliis lyrato-pinnatifidis dentatis canis, caule fruticoso.

Crambe fruticosa. *Willden. sp. pl.* 3, *p.* 420.
Nat. of Madeira. *Mr. Fr. Masson.* ♄.

7. C. *strigosa,* filamentis simplicibus, silicula stylo mucronata, foliis ovatis dentatis basi inæqualibus subauriculatis cauleque fruticoso hispidis.
Crambe strigosa. *Willden. sp. pl.* 3, *p.* 420.
Myagrum arborescens. *Jacqu. ic.* 1, *t.* 120.
Nat. of the Canary Islands. *Mr. Fr. Masson.* ♄.

8. C. *filiformis,* filamentis simplicibus, silicula mutica a pedicello longiore solubili, foliis lyratis pilosis.
Crambe filiformis. *Willden. sp. pl.* 3, *p.* 419. *Jacqu. ic.* 3, *t.* 504.
Nat. of Patagonia. ♃. [74

MYAGRUM. *Tournef. inst.* 211.

Silicula monosperma evalvis absque suturarum vestigio (quandoque loculis spuriis lateralibus). *Semen* pendulum.

1. M. *perfoliatum,* siliculis obcordatis: loculis duobus spuriis, foliis amplexicaulibus.
Myagrum perfoliatum. *Willden. sp. pl.* 3, *p.* 407. *Schkuhr handb.* 2, *p.* 210, *t.* 178.
Nat. of France and Switzerland. ⊙.

EUCLIDIUM.

Silicula ventricosa bilocularis, suturis manifestis valvarum non dehiscentium, loculis 1-spermis. *Cotyledones* planæ.

1. E. *syriacum,* siliculis scabris: stylo subulato persistenti, foliis lanceolatis petiolatis.
Bunias syriaca. *Willden. sp. pl.* 3, *p.* 413.
Anastatica syriaca. *Jacqu. austr.* 1, *p.* 7, *t.* 6.
Nat. of Austria and the Levant. ⊙.

RAPISTRUM. *Gærtn. sem.* 2, *p.* 285.

Silicula bilocularis non dehiscens nec suturarum vestigio. *Cotyledones* planæ. *Calyx* patens.

1. R. *ægyptiacum,* siliculis angulatis verrucoso-muricatis, foliis runcinatis.

Bunias ægyptiaca. *Willden. sp. pl.* 3, *p.* 414. *Jacqu. hort. vindob.* 2, *p.* 68, *t.* 145.

75] *Nat.* of Egypt and Greece. ⊙.

2. R. *paniculatum,* siliculis orbiculatis rugosiusculis, foliis lanceolatis subdentatis sagittatis amplexicaulibus.

Myagrum paniculatum. *Willden. sp. pl.* 3, *p.* 409. *Fl. dan.* 304.

Nat. of Europe. ⊙.

BUNIAS. *Gen. pl.* 1070.

Silicula nucamentacea evalvis. *Cotyledones* spirales lineares. *Germen* biloculare, loculis 1-2 spermis.

1. B. *Erucago,* siliculis tetragonis 4-locularibus: angulis subdentatis.

Bunias Erucago. *Willden. sp. pl.* 3, *p.* 411. *Jacqu. austr.* 4, *p.* 21, *t.* 340.

Nat. of Austria and the South of France. ⊙.

2. B. *orientalis,* siliculis ovatis gibbis subverrucosis, 1-2-locularibus.

Bunias orientalis. *Willden. sp. pl.* 3, *p.* 412. *Houtt. nat. hist.* 9, *tab.* 60, *f.* 2.

Nat. of the Levant. ♃.

76] CORONOPUS.

Gærtn. sem. 2, *p.* 293. *Smith fl. brit.* 2, *p.* 690.

Silicula didyma evalvis aptera, loculis 1-spermis. *Cotyledones* incumbentes, lineares.

1. C. *Ruellii*, siliculis integris cristato-muricatis.
Coronopus Ruellii. *Smith fl. brit.* 2, *p.* 690. *Engl. bot.* 1660.
Cochlearia Coronopus. *Willden. sp. pl.* 3, *p.* 450.
Nat. of Britain. ⊙.

2. C. *didyma*, siliculis emarginatis didymis rugosis, foliis pinnatifidis: laciniis lineari-lanceolatis indivisis incisisve.
Coronopus didyma. *Smith fl. brit.* 2, *p.* 691.
Lepidium didymum. *Willden. sp. pl.* 3, *p.* 439. *Engl. bot.* 248.
Nat. of England. ⊙.

BISCUTELLA. *Gen. pl.* 1084.

Silicula didyma, segmentis evalvibus foliaceo-compressis monospermis. *Radicula* descendens! *Cotyledones* accumbentes inversæ.

1. B. *auriculata*, calycibus bisaccatis, siliculæ segmentis in stylum coeuntibus.
Biscutella auriculata. *Willden. sp. pl.* 3, *p.* 472. *Schkuhr handb.* 2, *p.* 237, *t.* 182.
Nat. of France and Italy. ⊙.

2. B. *apula*, siliculis scabris, foliis cuneato-lanceolatis serrato-dentatis hirsutis.
Biscutella apula. *Willden. sp. pl.* 3, *p.* 473.
Iondraba alyssoides apula spicata. *Columm. ecphr.* 1, [77
p. 283, *t.* 285, *f.* 1.
Nat. of Italy. ⊙.

3. B. *coronopifolia*, siliculis glabris lævibus, foliis pinnatifido-dentatis hirtis.

Biscutella coronopifolia. *Linn. mant.* 255. *Decand. in annales du museum,* 18, *p.* 300, *t.* 14.
Nat. of Spain and Italy. ☉.

4. B. *lævigata,* siliculis glabris, foliis lanceolatis serrato-dentatis.
Biscutella lævigata. *Willden. sp. pl.* 3, *p.* 474. *Jacqu. austr.* 4, *p.* 20, *t.* 339.
Nat. of Austria and Italy. ♃.

5. B. *sempervirens,* siliculis scabriusculis, foliis dentatis tomentosis mollibus.
Biscutella sempervirens. *Willden. sp. pl.* 3, *p.* 475.
Nat. of Spain. ♃.

PELTARIA. *Gen. pl.* 1083.

Silicula orbiculata evalvis plana. *Germen* 2-3-spermum. *Filamenta* edentula. *Cotyledones* accumbentes.

1. P. *alliacea,* foliis amplexicaulibus oblongis indivisis. *Willden. sp. pl.* 3, *p.* 471. *Jacqu. austr.* 2, *p.* 14, *t.* 123.
78] *Nat.* of Austria. ♃.

CLYPEOLA. *Gen. pl.* 1082.

Silicula evalvis subrotunda plana. *Germen* monospermum. *Filamenta* dentata.

1. C. *Ionthlaspi,* foliis integerrimis tomentosis, calycibus persistentibus, siliculis pubescentibus.
Clypeola Ionthlaspi. *Willden. sp. pl.* 3, *p.* 471. *Cavanill. ic.* 1, *p.* 22, *t.* 34, *f.* 2.
Nat. of France and Italy. ☉.

ISATIS. *Gen. pl.* 1072.

Silicula unilocularis monosperma: valvis navicularibus tardius dehiscentibus. *Filamenta* edentula, distincta.

1. I. *tinctoria*, siliculis obovato-oblongis glabris, foliis caulinis sagittatis glabris.
Isatis tinctoria. *Willden. sp. pl.* 3, *p.* 420. *Engl. bot.* 97. *Svensk bot.* 35.
Nat. of England. ♂.

2. I. *aleppica*, siliculis lineari-oblongis pubescentibus ciliatis.
Isatis lusitanica. *Linn, sp. pl.* 936.
Isatis aleppica. *Scop. insub.* 2, *p.* 31, *t.* 16.
Isatis orientalis. *Willden. enum.* 663.
Nat. of the Levant. ⊙.

SUCCOWIA. *Mœnch method.* 265. [79

Silicula subglobosa stylo subulato cuspidata, valvis hemisphæricis echinatis: loculis monospermis. *Cotyledones* conduplicatæ.

1. SUCCOWIA *balearica.*
Bunias balearica. *Willden. sp. pl.* 3, *p.* 415. *Jacqu. hort. vindob.* 2, *p.* 68, *t.* 144.
Nat. of Minorca. ⊙.

VELLA. *Gen. pl.* 1073.

Silicula ventricosa; stylo foliaceo ovato. *Cotyledones* conduplicatæ. *Calyx* clausus.

1. V. *annua*, foliis pinnatifidis, siliculis pendulis. *Willden. sp. pl.* 3, *p.* 422. *Engl. bot.* 1442.
Nat. of England. ⊙.

2. V. *Pseudo-Cytisus*, foliis integris obovatis ciliatis, siliculis erectis. *Willden. sp. pl.* 3, *p.* 422. *Cavanill. ic.* 1, *p.* 32, *t.* 42.
Nat. of Spain. ♄.

ANASTATICA. *Gen. pl.* 1074.

Silicula ventricosa; valvulis juxta apicem auriculâ auctis. *Cotyledones* planæ.

1. ANASTATICA *hierochuntica.* *Willden. sp. pl.* 3, *p.* 423. *Jacqu. hort. vindob.* 1, *p.* 23, *t.* 58.
Nat. of the Levant. ♃.

80] ## ÆTHIONEMA.

Silicula valvis navicularibus alatis (quandoque non dehiscentibus). *Filamenta longiora* vel connata vel juxta apicem denticulata. *Calyx* insertione inæqualis.

1. Æ. *saxatile*, filamentis longioribus distinctis, foliis oblongis basi attenuatis.
Thlaspi saxatile. *Willden. sp. pl.* 3, *p.* 444. *Jacqu. austr.* 3, *p.* 21, *t.* 236. *Schkuhr handb.* 2, *p.* 223, *t.* 180.
Nat. of the South of Europe. ⊙.

2. Æ. *monospermum*, siliculis evalvibus monospermis, foliis ovalibus obovatisve.
Nat. of *Spain.* ♂.

THLASPI. *Gen. pl.* 1078.

Silicula compressa emarginata, valvis navicularibus (sæpius alatis), polysperma. *Filamenta* edentula distincta. *Calyx* insertione æqualis, patens.

1. T. *arvense*, siliculis orbiculatis: ala dilatata longitudinali, seminibus concentrice striatis, foliis oblongis sagittatis dentatis glabris.

Thlaspi arvense. *Willden. sp. pl.* 3, *p.* 442. *Curtis lond. Engl. bot.* 1659. *Fl. dan.* 793. *Svensk bot.* 214.
Nat. of Britain. ⊙.

2. T. *alliaceum,* siliculis subrotundis ventricosis: ala angustata deorsim obsoleta, foliis oblongis obtusis acute [81 sagittatis subdentatis glabris.
Thlaspi alliaceum. *Willden. sp. pl.* 3, *p.* 443. *Jacqu. ic.* 1, *t.* 121.
Nat. of the South of Europe. ⊙.

3. T. *ceratocarpon,* siliculis ventricosis; alis apicis acutissimis, foliis sagittatis lanceolatis subdentatis glabris.
Thlaspi ceratocarpon. *Willden. sp. pl.* 3, *p.* 448. *Scop. insub.* 1, *p.* 10, *t.* 4.
Nat. of Siberia. ⊙.

4. T. *Bursa pastoris,* siliculis obcordatis apteris, foliis radicalibus pinnatifidis.
Thlaspi Bursa pastoris. *Willden. sp. pl.* 3, *p.* 447. *Curtis lond. Engl. bot.* 1485.
Nat. of Britain. ⊙.

5. T. *perfoliatum,* siliculis obcordatis alatis; stylo incluso brevissimo, foliis caulinis cordatis subdentatis glabris.
Thlaspi perfoliatum. *Willden. sp. pl.* 3, *p.* 446. *Jacqu. austr.* 4, *p.* 19, *t.* 337.
Nat. of England. ♃.

6. T. *alpestre,* siliculis obovatis retusis: loculis 4—6-spermis; stylo exserto, staminibus longitudine petalorum, foliis caulinis cordato-sagittatis, caule simplici.
Thlaspi alpestre. *Willden. sp. pl.* 3, *p.* 447. *Engl. bot.* 81.
Nat. of England. ♃. [82

7. T. *montanum,* siliculis retusis: loculis 2-spermis; stylo exserto, staminibus corolla brevioribus, petalis calycem ter superantibus, foliis caulinis cordato-sagittatis.

Thlaspi montanum. *Willden. sp. pl.* 3, *p.* 445. *Jacqu. austr.* 3, *p.* 22, *t.* 237.
Nat. of Austria. ♂.

HUTCHINSIA.

Silicula elliptica integra: valvis navicularibus apteris, loculis dispermis. *Filamenta* edentula.

1. H. *rotundifolia,* foliis inferioribus orbiculato-ovatis petiolatis; superioribus cordato-sagittatis integris.
Iberis rotundifolia. *Willden. sp. pl.* 3, *p.* 454.
Lepidium rotundifolium. *Allion. pedem.* 1, *p.* 252. *t.* 55, *f.* 2.
Nat. of Switzerland and Piedmont. ♃.

2. H. *alpina,* foliis pinnatis integerrimis glabris, petalis calyce deciduo duplo longioribus, siliculis utrinque acutis; stylo brevissimo exserto.
Lepidium alpinum. *Willden. sp. pl.* 3, *p.* 433. *Jacqu. austr.* 2, *p.* 23, *t.* 137.
Nat. of the Alps of Germany, Switzerland, and Italy. ♃.

3. H. *petræa,* foliis pinnatis integerrimis, petalis calyce vix
83] longioribus, siliculis utrinque obtusis; stigmate sessili.
Lepidium petræum. *Willden. sp. pl.* 3, *p.* 434. *Engl. bot.* 111.
Nat. of England. ♂.

TEESDALIA.

Silicula emarginata, valvis navicularibus, loculis dispermis. *Filamenta* basi intus squamula aucta.

1. Teesdalia *nudicaulis.*
Iberis nudicaulis. *Willden. sp. pl.* 3, *p.* 458. *Curtis lond. Engl. bot.* 327.
Nat. of Britain. ⊙.

IBERIS. *Gen. pl.* 1080.

Silicula emarginata: valvis navicularibus alatis; loculis monospermis. *Petala* inæqualia.

1. I. *semperflorens*, frutescens, foliis spathulatis glabris integerrimis obtusis. *Willden. sp. pl.* 3, *p.* 452.

Thlaspidium fruticosum Leucoii folio semperflorens. *Zanon. hist.* 214, *t.* 165.

Nat. of Persia and Sicily. ♄.

2. I. *sempervirens*, frutescens, foliis oblongo-linearibus integerrimis glabris, corymbis racemosis.

Iberis sempervirens. *Willden. sp. pl.* 3, *p.* 453.

Thlaspidium. *Rivin. tetrapet.* 110.

Nat. of the Island of Candia. ♄.

3. I. *gibraltarica*, frutescens, foliis cuneiformibus [84
obtusis apice dentatis glabris. *Willden. sp. pl.* 3, *p.* 453. *Curtis magaz.* 124.

Nat. of Spain. ♄.

4. I. *saxatilis*, frutescens, foliis integerrimis acutis pubescentibus: inferioribus linearibus; superioribus lanceolatis. *Willden. sp. pl.* 3, *p.* 453.

Thlaspi saxatile, vermiculato folio. *Garid. prov.* 460, *t.* 101.

Nat. of France and Italy. ♄.

5. I. *ciliata*, herbacea, foliis subcarnosis ciliatis: radicalibus spathulatis; caulinis linearibus. *Willden. sp. pl.* 3, *p.* 455. *Botan. magaz.* 1030.

Nat. of Mount Caucasus. ♃.

6. I. *umbellata*, herbacea, foliis lanceolatis acuminatis; inferioribus serratis; superioribus integerrimis. *Willden. sp. pl.* 3, *p.* 456. *Curtis magaz.* 106.

Nat. of the South of Europe. ⊙.

7. I. *amara,* herbacea, foliis lanceolatis acutiusculis subdentatis glabris, floribus racemosis,
85] Iberis amara. *Willden. sp. pl.* 3, *p.* 456. *Engl. bot.* 52.
Nat. of England. ⊙.

8. I. *violacea,* herbacea, foliis petiolatis spathulatis obtusis dentatis integerrimisque ciliatis, corymbo subumbellato.
Nat. ⊙.

9. I. *linifolia,* herbacea, foliis linearibus integerrimis glabris, caule ramoso, corymbis hemisphæricis.
Iberis linifolia. *Willden. sp. pl.* 3, *p.* 457.
Thlaspi lusitanicum umbellatum gramineo folio flore purpurascente. *Garid. prov.* 459, *t.* 105.
Nat. of Spain and Portugal. ♂.

10. I. *pinnata,* herbacea, foliis pinnatifidis, caule erecto paniculato, petalis calyce triplo longioribus.
Iberis pinnata. *Willden. sp. pl.* 3, *p.* 458.
Thlaspi alterum minus umbellatum nasturtii hortensis folio, narbonense. *Lobel. ic.* 218.
Nat. of the South of Europe. ⊙.

LEPIDIUM. *Gen. pl.* 1077.

Silicula loculis monospermis; valvis navicularibus. *Petala* æqualia.

1. L. *latifolium,* foliis lanceolatis indivisis serratis integerrimisve, siliculis ovalibus integris.
86] Lepidium latifolium. *Willden. sp. pl.* 3, *p.* 436. *Engl. bot.* 182.
Nat. of Britain. ♃.

2. L. *lyratum,* foliis lyratis crispis, siliculis ovatis integris.
Lepidium lyratum. *Willden. sp. pl.* 3, *p.* 435.
Lepidium orientale, nasturtii crispi folio. *Tournef. it.* 2, *p.* 339, *cum tab.*
Nat. of the Levant. ⊙.

3. L. *Draba*, foliis amplexicaulibus indivisis lanceolatis oblongisve dentatis, siliculis cordatis apice integris stylo acuminatis.

Cochlearia Draba. *Willden. sp. pl.* 3, *p.* 451. *Jacqu. austr.* 4, *p.* 8, *t.* 315.

Nat. of Austria, France, and Italy. ♃.

4. L. *graminifolium*, foliis caulinis linearibus integris, siliculis ovatis acutis integerrimis, floribus hexandris, petalis calyce longioribus.

Lepidium graminifolium. *Linn. sp. pl.* 900.

Lepidium Iberis. *Linn. sp. pl.* 900, secundum synonyma omnia.

Nat. of Germany, France, and Italy. ♃.

5. L. *divaricatum*, foliis inferioribus pinnatifidis; rameis linearibus, caule ramosissimo, siliculis ovalibus obsolete emarginatis imbricatis.

Lepidium divaricatum. *Willden. sp. pl.* 3, *p.* 441. [87

Nat. of the Cape of Good Hope. *Mr. Fr. Masson.* ♄.

6. L. *ruderale*, floribus diandris apetalis, foliis radicalibus pinnatifidis; rameis linearibus integerrimis, siliculis emarginatis patentibus.

Lepidium ruderale. *Willden. sp. pl.* 3, 440. *Engl. bot.* 1595.

Nat. of Britain. ☉.

7. L. *bonariense*, floribus diandris, petalis minutis, foliis caulinis pinnatifidis incisisve cauleque pilosiusculis, siliculis subrotundis emarginatis.

Lepidium bonariense. *Willden. sp. pl.* 3, *p.* 441.

Thlaspi bonariense multiscissum, flore invisibili. *Dill. elth.* 381, *t.* 286, *f.* 370.

Nat. of South America. ☉.

8. L. *Cardamines*, foliis radicalibus pinnatis; caulinis lyratis, siliculis emarginatis.

Lepidium Cardamines. *Willden. sp. pl.* 3, *p.* 434. *Act. stockholm.* 1755, *p.* 273, t. 8, 9.

Nat. of Spain. ♂.

9. L. *subulatum*, foliis subulatis integerrimis cauleque suffruticoso pubescentibus, siliculis emarginatis; stigmate semiexserto.

Lepidium subulatum. *Willden. sp. pl.* 3, *p.* 438. *D'Asso arag.* 83, *t.* 6, *f.* 3.

88] *Nat.* of Spain. ♄.

10. L. *piscidium*, foliis ovali-oblongis extrorsum dentatis integerrimisve, siliculis oblongo-obovatis emarginatis; stigmate exserto.

Lepidium piscidium. *Willden. sp. pl.* 3, *p.* 437.

Lepidium oleraceum. *Edit. prior.* 2, *p.* 374, excluso synonymo Forsteri.

Lepidium bidentatum. *Montin in nov. act. acad. nat. curios.* 6, *p.* 324, *tab.* 5, *a.*

Nat. of the Society Islands. ⊙.

11. L. *perfoliatum*, foliis caulinis pinnatis bipinnatisque; rameis cordatis amplexicaulibus integris.

Lepidium perfoliatum. *Willden. sp. pl.* 3, *p.* 431. *Jacqu. austr.* 4, *p.* 24, *t.* 346.

Nat. of Austria and the Levant. ⊙.

12. L. *spinosum*, foliis pinnatis, siliculis cuneatis semibifidis.

Lepidium spinosum. *Willden. sp. pl.* 3, *p.* 434.

Nat. of the Levant. ⊙.

13. L. *campestre*, siliculis ovatis emarginatis alatis, foliis caulinis sagittatis dentatis.

Thlaspi campestre. *Willden. sp. pl.* 3, *p.* 444. *Curt. lond. Engl. bot.* 1385.

Nat. of Britain. ⊙.

89] 14. L. *sativum*, cotyledonibus tripartitis.

Lepidium sativum. *Willden. sp. pl.* 3, *p.* 435. *Zorn. ic.* 16.

a. Nasturtium hortense vulgatum. *Bauh. pin.* 103.

β. Nasturtium hortense crispum. *Bauh. pin.* 104. *prodr.* 44, *cum ic. in p.* 43 *et* 44.
Nat. ⊙.

15. L. *virginicum,* floribus 2-3-andris tetrapetalis, foliis caulinis lineari-lanceolatis inciso-serratis, siliculis orbiculatis emarginatis.
Lepidium virginicum. *Willden. sp. pl.* 3, *p.* 440.
Lepidium Iberis. *Schkuhr handb.* 2, *p.* 222, *t.* 180.
Nat. of North America and Jamaica. ⊙.

COCHLEARIA. *Gen. pl.* 1079.

Silicula subovata polysperma: valvis ventricosis. *Semina* immarginata: cotyledonibus accumbentibus. *Filamenta* breviora edentula. *Calyx* patens.

1. C. *officinalis,* siliculis subrotundis, foliis radicalibus reniformibus.
Cochlearia officinalis. *Willden. sp. pl.* 3, *p.* 448. *Engl. bot.* 551. *Svensk bot.* 87.
Nat. of Britain. ⊙.

2. C. *anglica,* siliculis ellipticis, foliis radicalibus ovatis integris.
Cochlearia anglica. *Willden. sp. pl.* 3, *p.* 449. *Engl. bot.* 552.
Nat. of Britain. ⊙. [90

3. C. *danica,* siliculis ellipticis, foliis omnibus deltoideis.
Cochlearia danica. *Willden. sp. pl.* 3, *p.* 449. *Engl. bot.* 696.
Nat. of Britain. ⊙.

4. C. *glastifolia,* siliculis sphæricis reticulato-venosis, foliis caulinis amplexicaulibus sagittato-cordatis acutis.
Cochlearia glastifolia. *Willden. sp. pl.* 3, *p.* 451.

Lepidium glastifolium perenne. *Moris. hist.* 2, *p.* 312, *s.* 3, *t.* 21, *f.* 3.
Nat. of Germany. ♂.

5. C. *saxatilis,* siliculis lentiformibus lævibus, foliis radicalibus oblongis dentatis pilosis.
Myagrum saxatile. *Willden. sp. pl.* 3, *p.* 409. *Jacqu. austr.* 2, *p.* 17, *t.* 128.
Nat. of Austria and Switzerland. ♃.

6. C. *Armoracia,* siliculis oblongis; stigmate dilatato subsessili, foliis radicalibus oblongis crenatis; caulinis elongato-lanceolatis dentatis incisisve.
Cochlearia Armoracia. *Willden. sp. pl. p.* 451. *Engl. bot.* 2223. *Schkuhr handb.* 2, *p.* 229, *t.* 181.
Nat. of England. ♃.

SUBULARIA. *Gen. pl.* 1075.

Silicula ovalis mutica polysperma: valvis ventricosis. *Cotyledones* incumbentes lineares bicrures.

1. SUBULARIA *aquatica.*
Subularia aquatica. *Willden. sp. pl.* 3, *p,* 423. *Engl. bot.* 732.
Nat. of Britain. ☉.

DRABA. *Gen. pl.* 1076.

Silicula integra ovalis: valvis planis v. convexiusculis; loculis polyspermis. *Semina* immarginata: cotyledonibus accumbentibus. *Filamenta* edentula.

1. D. *verna,* scapis nudis, petalis bipartitis, foliis lanceolatis subincisis hirtis. *Smith fl. brit.* 2, *p.* 677. *Engl. bot.* 586. *Curtis lond. Fl. dan.* 983.
Nat. of Britain. ☉.

2. D. *rupestris,* scapis nudis monophyllisve; petalis

indivisis, siliculis lanceolatis pubescentibus, foliis planis lanceolatis pilosis.

Draba hirta. *Smith fl. brit.* 2, *p.* 677 (excluso synonymo Linnæi et Floræ danicæ). *Engl. bot.* 1338.

Nat. of Scotland. ♃.

3. D. *incana,* foliis caulinis numerosis incanis subdentatis, siliculis oblongis glabris contortis.

Draba incana. *Willden. sp. pl.* 3, *p.* 430. *Engl. bot.* 388.

Nat. of Britain. ♂. [92

4. D. *muralis,* caule ramoso, foliis ovatis amplexicaulibus dentatis, siliculis patentibus glabris. *Willden. sp. pl.* 3, *p.* 429. *Engl. bot.* 912. *Scop. insubr. fasc.* 2, *t.* 15.

Nat. of England. ⊙.

5. D. *nemoralis,* caule ramoso, foliis ovatis amplexicaulibus dentatis, siliculis patentibus pubescentibus. *Willden. sp. pl.* 3, *p.* 429.

Nat. of Europe. ⊙.

6. D. *aizoides,* scapis nudis glabris, foliis lanceolato-linearibus rigidis carinatis ciliatis, staminibus petala æquantibus, stylo longitudine dimidii germinis.

Draba aizoides. *Willden. sp. pl.* 3, *p.* 424 (exclusis synonymis Milleri et Curtisii). *Engl. bot.* 1271.

Nat. of Wales. ♃.

7. D. *ciliaris,* scapis nudis glabris, foliis elongato-linearibus ciliatis, staminibus calycem vix æquantibus.

Draba ciliaris. *Willden. sp. pl.* 3, *p.* 425.

Draba aizoides. *Curtis magaz.* 170.

Alyssum alpinum hirsutum luteum. *Mill. ic.* 1, *p.* 14, *t.* 20, *f.* 2.

Nat. of Switzerland. ♃.

93] PETROCALLIS.

Silicula integra ovalis: valvis planiusculis; loculis dispermis. *Semina* immarginata: funiculis umbilicalibus dissepimento adnatis! *Filamenta* edentula.

1. PETROCALLIS *pyrenaica.*
Draba pyrenaica. *Willden. sp. pl.* 3, *p.* 428. *Botan. magaz.* 713.
Nat. of Austria and the Pyrenees. ♃.

CAMELINA. *Crantz austr.* 1, *p.* 18.

Silicula subovata polysperma: valvis ventricosis. *Cotyledones* incumbentes. *Filamenta* edentula.

1. C. *sativa,* siliculis obovatis marginatis, stigmate simplici, foliis lanceolatis sagittatis.
Myagrum sativum. *Willden. sp. pl.* 3, *p.* 408. *Fl. dan.* 1038.
Alyssum sativum. *Engl. bot.* 1254.
Nat. of Britain. ⊙.

2. C. *austriaca,* siliculis subrotundis immarginatis, stigmate capitato, foliis oblongis sagittatis dentatis glabris.
Alyssum austriacum. *Willden. sp. pl.* 3, *p.* 408. *Jacq. austr.* 2, *p.* 7, *t.* 111.
Nat. of Austria. ⊙.

ALYSSUM. *Lamarck illustr. tab.* 559.

Silicula subrotunda: valvis omnino vel limbo planiusculis; loculis 1—4-spermis. *Semina* marginata. *Cotyledones* 94] accumbentes.

* *Herbacea.*

1. A. *calycinum,* siliculis emarginatis pubescentibus, calycibus persistentibus, filamentis edentulis: brevioribus stipatis pari setarum.
Alyssum calycinum. *Willden. sp. pl.* 3, *p.* 464.
Alyssum campestre. *Schkuhr handb.* 2, *p.* 234, *t.* 181.
Nat. of Austria and France. ⊙.

2. A. *campestre,* siliculis emarginatis pubescentibus stylo 4-plo longioribus, calycibus deciduis, filamentis omnibus appendiculatis, foliis pedunculisque pube stellata sparsa.
Alyssum campestre. *Willden. sp. pl.* 3, *p.* 457.
Nat. of France. ⊙.

3. A. *montanum,* siliculis emarginatis incanis stylo parum longioribus, calycibus deciduis, filamentis omnibus appendiculatis, foliis ramisque incanis.
Alyssum montanum. *Willden. sp. pl.* 3, *p.* 466. *Curtis magaz.* 419.
Nat. of Germany and Switzerland. ♃.

** *Fruticosa.*

4. A. *saxatile,* siliculis emarginatis glabris, filamentis longioribus simplicibus, foliis oblongis lanceolatisve repandis tomentosis.
Alyssum saxatile. *Willden. sp. pl.* 3, *p.* 460. *Curtis* [95
magaz. 159.
Nat. of the Island of Candia. ♄.

5. A. *alpestre,* siliculis integris, filamentis omnibus appendiculatis, foliis obovatis spathulatisque incanis, caulibus adscendentibus suffruticosis.
Alyssum alpestre. *Willden. sp. pl.* 3, *p.* 461. *Jacqu. collect.* 4, *p.* 227, *t.* 4, *f.* 1. *Allion. pedem.* 1, *p.* 241, *t.* 18, *f.* 2.
Nat. of Italy. ♄

6. A. *spinosum*, siliculis integris glabris, filamentis edentulis, ramis floriferis persistentibus spinescentibus, foliis spathulatis incanis; pube stellari minutissima.
Alyssum spinosum. *Willden. sp. pl.* 3, *p.* 459.
Thlaspi spinosum hispanicum. *Barrel. ic.* 808.
Nat. of the South of Europe. ♄.

7. A. *maritimum*, siliculis integris glabris: loculis monospermis, filamentis edentulis, foliis lineari-lanceolatis acutis subincanis; pilis bipartitis adpressis.
Alyssum maritimum. *Willden. sp. pl.* 3, *p.* 459. *Engl. bot.* 1729.
Alyssum halimifolium. *Linn. sp. pl.* 907. *Curtis magaz.* 101.
Alyssum minimum. *Linn. sp. pl.* 908.
Nat. of England. ♄.

96] FARSETIA.

Silicula ovali-oblonga polysperma sessilis, valvis planis v. convexiusculis (non inflatis). *Cotyledones* accumbentes. *Semina* marginata vel *Filamenta* quædam denticulata.

* *Semina marginata. Valvæ planæ.*

1. F. *Cheiranthoides*, caulibus fruticosis erectis, foliis linearibus incanis, calycibus clausis.
Cheiranthus Farsetia. *Willden. sp. pl.* 3, *p.* 526. *Desfont. atlant.* 2, *p.* 89, *t.* 160.
Nat. of the Levant. ♄.

2. F. *lunarioides*, caulibus suffruticosis adscendentibus, foliis spathulatis petiolatis siliculisque tomentosis incanis.
Alyssum lunarioides. *Willden. sp. pl.* 3, *p.* 461.
Lunaria fruticosa perennis incana Leucoii foliis. *Tournef. it.* 1, *p.* 242, *cum tab.*
Nat. of the Archipelago. ♃.

3. F. *clypeata,* caulibus herbaceis erectis, foliis oblongis repandis.
Alyssum clypeatum. *Willden. sp. pl.* 3, *p.* 468.
Alyssum Dioscoridis. *Dod. pempt.* 89.
Nat. of the South of Europe. ⊙.

** *Valvæ convexiusculæ. Filamenta breviora denticulata.*

4. F. *mutabilis,* siliculis glabris compressis, seminibus marginatis.
Alyssum mutabile. *Venten. cels.* 85. [97
Nat. of the Levant. ♃.

5. F. *incana,* siliculis pubescentibus subventricosis, seminibus immarginatis.
Alyssum incanum. *Willden. sp. pl.* 3, *p.* 463.
Thlaspi incanum machliniense. *Clus. hist.* 2, *p.* 132.
Nat. of the North of Europe. ♂.

⁂ *Calyx basi bisaccatus. Valvæ convexiusculæ.*

6. F. *deltoidea,* caulibus diffusis, foliis pilosis.
Alyssum deltoideum. *Willden. sp. pl.* 3, *p.* 470. *Curtis magaz.* 126.
Nat. of the Levant. ♃.

VESICARIA. *Lamarck illustr. tab.* 559.

Silicula inflata, subglobosa, polysperma. *Cotyledones* accumbentes.

1. V. *utriculata,* calycibus bisaccatis, filamentis omnibus edentulis, foliis integerrimis glabriusculis.
Alyssum utriculatum. *Willden. sp. pl.* 3, *p.* 470. *Curtis magaz.* 130. *Waldst. et Kitaib. hung.* 2, *p.* 215, *t.* 196.
Nat. of the Levant and Hungary. ♃.

2. V. *sinuata,* foliis incanis subdentatis, siliculis membranaceis glabris stylo cuspidatis. [98

Alyssum sinuatum. *Willden. sp. pl.* 3, *p.* 468.
Eruca peregrina. *Clus. hist.* 2, *p.* 134.
Nat. of Spain.

LUNARIA. *Gen. pl.* 1085.

Silicula elliptica pedicellata polysperma: valvis planis. *Semina* marginata. *Cotyledones* accumbentes.

1. L. *rediviva*, siliculis oblongis utrinque acutis, pedicello germinis stamina breviora superante, dentibus foliorum mucronatis.
Lunaria rediviva. *Willden. sp. pl.* 3, *p.* 476.
Lunaria græca perennis. *Besl. eyst. vern.* 7, *f.* 2.
Nat. of Austria and Hungary. ♃.

2. L. *annua*, siliculis ovalibus utrinque obtusis, staminibus brevioribus pedicellum germinis superantibus, dentibus foliorum submuticis.
Lunaria annua. *Willden. sp. pl.* 3, *p.* 477. *J. Miller illustr.*
Nat. of Germany. ⊙.

RICOTIA. *Gen. pl.* 1086.

Silicula oblonga sessilis: valvis planis; septo obliterato unilocularis. *Cotyledones* accumbentes obcordatæ.

1. Ricotia *ægyptiaca*. *Willden. sp. pl.* 3, *p.* 477.
99] Lunaria foliis supradecompositis: foliolis trifidis, siliquis oblongis pendulis. *Mill. ic.* 2, *p.* 113, *t.* 169.
Nat. of Egypt. ⊙.

SILIQUOSA.

HELIOPHILA. *Gen. pl.* 1092.

Siliqua integra v. moniliformis. *Cotyledones* incumbentes curvatæ (2-3-crures) lineares. *Filamenta breviora* basi extus dentata dum siliqua integra.

1. H. *incana*, pubescens, foliis spathulatis integerrimis, siliquis teretiusculis pubescentibus erectis, caule fruticoso.
Heliophila incana. *Willden. sp. pl.* 3, *p.* 527, excluso synonymo Burmanni.
Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

2. H. *filiformis*, glabra, foliis angusto-linearibus elongatis integerrimis, siliquis teretibus subulatis pendulis.
Heliophila filiformis. *Willden. sp. pl.* 3, *p.* 529.
Nat. of the Cape of Good Hope. ⊙.

3. H. *platysiliqua*, glabra, foliis carnosis semiteretibus integerrimis, siliquis plano-compressis pendulis, caule suffruticoso.
Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

4. H. *pilosa*, hirsuta: pilis patulis, foliis planis nunc [100 linearibus integerrimis nunc divisis subcuneiformibus, siliquis teretiusculis glabris integerrimis.
Heliophila pilosa. *Lamarck encycl.* 3, *p.* 90.
a integrifolia. Heliophila integrifolia. *Willden. sp. pl.* 3, *p.* 527.
Heliophila. *Burmann, in nov. act. upsal,* 1, *p.* 94, *t.* 7.
β incisa. Heliophila arabioides. *Botan. magaz.* 496.
Nat. of the Cape of Good Hope. ⊙.

5. H. *amplexicaulis*, glabra, foliis lineari-lanceolatis amplexicaulibus integerrimis suboppositis, siliquis moniliformibus.

Heliophila amplexicaulis. *Willden. sp. pl.* 3, *p.* 528.
Nat. of the Cape of Good Hope. ⊙.

6. H. *fœniculacea*, pilosiuscula, foliis pinnatis bipinnatisque filiformibus, siliquis linearibus, caule erecto angulato.
Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ⊙.

7. H. *pinnata*, glabra, foliis pinnatis filiformibus, siliquis toroso-moniliformibus pendulis.
Heliophila pinnata. *Venten. malmais.* 113, exclusis synonymis.
Heliophila pendula. *Willden. sp. pl.* 3, *p.* 529.
Nat. of the Cape of Good Hope. ⊙.

101] CARDAMINE.

Gen. pl. 1088. Dentaria. *Gen. pl.* 1087.

Siliqua linearis marginibus truncatis: valvis planis enervibus (elastice sæpius dissilientibus), dissepimento angustioribus.

1. C. *enneaphylla*, caule simplicissimo apice triphyllo, foliis ternatis: foliolis lanceolatis inciso-serratis, staminibus corollam subæquantibus.
Dentaria enneaphylla. *Willden. sp. pl.* 3, *p.* 478. *Jacqu. austr.* 4, *p.* 9, *t.* 316.
Nat. of Austria and Italy. ♂.

2. C. *pentaphylla*, caule simplicissimo apice triphyllo, foliis quinato-digitatis: foliolis elliptico-lanceolatis inciso-serratis, corolla staminibus duplo longiore.
Dentaria pentaphylla. *Willden. sp. pl.* 3, *p.* 480.
Dentaria pentaphyllos foliis mollibus. *Garid. prov.* 152, *t.* 29.
Nat. of Switzerland and the South of France. ♃.

3. C. *pinnata*, caule simplicissimo apice triphyllo, foliis pinnatis: foliolis (5—7) elongato-lanceolatis inciso-serratis.

Dentaria pinnata. *Willden. sp. pl.* 3, *p.* 480.
Dentaria heptaphyllos. *Garid. prov.* 152, *t.* 28.
Nat. of Switzerland and the South of France. ♃.

4. C. *bulbifera*, caule simplicissimo, foliis inferioribus pinnatis; superioribus simplicibus.
Dentaria bulbifera. *Willden. sp. pl.* 3, *p.* 479. *Eng.* [102
bot. 309. *Select specim.* 7.
Nat. of England. ♃.

5. C. *asarifolia*, foliis simplicibus reniformibus.
Cardamine asarifolia. *Willden. sp. pl.* 3, 482.
Nasturtium montanum asari folio. *Herm. parad.* 203, *cum tab.*
Nat. of Italy. ♃.

6. C. *trifolia*, foliis ternatis: foliolis rhombeo-subrotundis denticulatis, caule subnudo simplici.
Cardamine trifolia. *Willd. sp. pl.* 3, *p.* 483. *Botan. magaz.* 452.
Nat. of Lapland, Austria and Switzerland. ♃.

7. C. *africana*, foliis ternatis acuminatis, caule ramosissimo. *Willden. sp. pl.* 3, *p.* 483.
Nasturtium africanum, foliis ternis, facie Christophorianæ. *Herm. parad.* 202, *cum. tab.*
Nat. of the Cape of Good Hope. ♃.

8. C. *chelidonia*, foliis pinnatis: foliolis quinis crenato-incisis: lateralibus ternatis auriculatisve, germine piloso.
Cardamine chelidonia. *Willd. sp. pl.* 3, *p.* 484. *Waldst. et Kitaib.* 2, *p.* 149, *t.* 140.
Nat. of Italy. ♃.

9. C. *græca*, foliis pinnatis: foliolis ovatis lobatis [103
obtusis.
Cardamine græca. *Willden. sp. pl.* 3, *p.* 484.
Sio minimo Prosperi Alpini affinis, siliquis latis. *Boccon. sic.* 84, *t.* 44, *f.* 2.
Nat. of the South of Europe. ⊙.

10. C. *amara*, foliis pinnatis: foliolis radicalibus subrotundis; caulinis dentato-angulatis, stylo obliquo, stigmate acutiusculo, caule basi radicante.

Cardamine amara. *Willden. sp. pl.* 3, *p.* 488. *Curtis lond. Engl. bot.* 1000.

Nat. of Britain. ♃.

11. C. *latifolia*, foliis pinnatis glabris: foliolis (5—7) radicalibus subrotundis; caulinis ovatis dentato-angulatis, stigmate capitato.

Cardamine latifolia. *Willden. sp. pl.* 3, *p.* 487.

Nasturtium pyrenaicum aquaticum latifolium purpurascente flore. *Herm. paradis.* 203, *cum tab.*

Nat. of Spain. ♂.

12. C. *pratensis*, foliis pinnatis: foliolis radicalibus subrotundis; caulinis lanceolatis, stylo stricto, stigmate capitato.

Cardamine pratensis. *Willden. sp. pl.* 3, *p.* 487. *Curtis lond. Engl. bot.* 776. *Fl. dan.* 1039.

α floribus simplicibus.

β floribus plenis.

104] *Nat.* of Britain. ♃.

13. C. *impatiens*, foliis pinnatis: foliolis lanceolatis subincisis, stipulis ciliatis, petalis linearibus nullisve.

Cardamine impatiens. *Willden. sp. pl.* 3, *p.* 485. *Engl. bot.* 80.

Nat. of Britain. ⊙.

14. C. *hirsuta*, foliis omnibus pinnatis exstipulatis: foliolis petiolatis: radicalibus subrotundis, staminibus (4—6) petala subæquantibus, stigmate subsessili.

Cardamime hirsuta. *Willden. sp. pl.* 3, *p.* 486. *Curtis lond. Engl. bot.* 492.

Nat. of Britain. ⊙.

15. C. *resedifolia*, foliis inferioribus indivisis; superioribus tripartitis pinnatisve stipulatis.

Cardamine resedifolia. *Willden. sp. pl.* 3, *p.* 482. *Allion. pedem.* 1, *p.* 261, *t.* 57, *f.* 2.
Nat. of Switzerland and Germany. ⊙.

ARABIS. *Gen. pl.* 1094.

Siliqua linearis stigmate subsessili coronata: valvis venosis v. nervosis. *Semina* uniseriata. *Cotyledones* accumbentes. *Calyx* erectus.

1. A. *cærulea,* foliis obovatis glabris ciliatis apice subdentatis, caule paucifolio, racemo cernuo.
Arabis cærulea. *Willden. sp. pl.* 3, *p.* 537.
Turritis cærulea. *Allion. pedem.* 1, *p.* 270, *t.* 40, *f.* 2.
Nat. of Switzerland. ♃. [105

2. A. *nutans,* foliis subdentatis: radicalibus obovatis utrinque pilosis scabris; caulinis ovalibus, racemo subnutante.
Arabis nutans. *Willden. sp. pl.* 3, *p.* 537.
Arabis pumila. *Jacqu. austr.* 3, *p.* 44, *t.* 281.
Nat. of Switzerland, Austria and Italy. ♃.

3. A. *bellidifolia,* foliis subdentatis glabris: radicalibus cuneato-obovatis; caulinis oblongis sessilibus, racemo erecto.
Arabis bellidifolia. *Willden. sp. pl.* 3, *p.* 537. *Jacqu. austr.* 3, *p.* 44, *t.* 280.
Nat. of Austria and Switzerland. ♃.

4. A. *alpina,* foliis serrato-dentatis pubescentibus; caulinis amplexicaulibus, pedunculis longitudine calycis, valvis planis, stigmate integro.
Arabis alpina. *Willden. sp. pl.* 3, *p.* 534. *Curtis magaz.* 226.
Nat. of Switzerland. ♃.

5. A. *verna,* foliis pubescentibus dentatis: caulinis cordatis amplexicaulibus, pedunculis calyce duplo brevioribus, valvis convexis, stigmate emarginato.

Hesperis verna. *Willden. sp. pl.* 3, *p.* 533.
Leucojum maritimum latifolium annuum. *Moris. hist.* 2, *p.* 241, *s.* 3, *t.* 8, *f.* 5.
106] *Nat.* of the South of France. ⊙.

6. A. *stricta,* foliis dentatis obtusis hispidis: radicalibus sublyratis, caulibus hispidis, petalis erectis. *Smith fl. brit.* 2, *p.* 712. *Engl. bot.* 614.
Arabis stricta. *Willden. sp. pl.* 3, *p.* 539.
Nat. of England. ♃.

7. A. *arenosa,* foliis caulinis sinuato-pinnatifidis petiolatis: pube ramosa, caule hispido: pilis simplicibus, petalis calyce triplo longioribus.
Arabis arenosa. *Scop. carn. n.* 837, *t.* 40.
Sisymbrium arenosum. *Willden. sp. pl.* 3, *p.* 498.
Nat. of Germany and Switzerland. ⊙.

8. A. *hispida,* foliis radicalibus sinuato-lyratis elongato-petiolatis; caulinis plerisque indivisis glabris, pedunculis fructiferis patulis longitudine dimidii siliquæ.
Arabis hispida. *Smith. fl. brit.* 2, *p.* 713. *Willden. sp. pl.* 3, *p.* 538.
Cardamine hastulata. *Engl. bot.* 469.
Nat. of Britain. ♃.

9. A. *thaliana,* foliis dentatis pilosis: radicalibus oblongis, staminibus petala subæquantibus siliquis adscendentibus.
Arabis thaliana. *Willden. sp. pl.* 3, *p.* 535. *Curtis lond. Engl. bot.* 901. *Fl. dan.* 1106.
Nat. of Britain. ⊙.

107] 10. A. *ciliata,* foliis subdentatis ovalibus glabris ciliatis: radicalibus subsessilibus obtusis; caulinis semi-amplexicaulibus, caule simplici.
Turritis alpina. *Engl. bot.* 1746. *Willden. sp. pl.* 3, *p.* 545.
Turritis ciliata. *Willden. sp. pl.* 3, *p.* 544.
Nat. of Ireland. ♂.

11. A. *hirsuta*, foliis omnibus hispidis dentatis: caulinis semi-amplexicaulibus, siliquis strictis.
Turritis hirsuta. *Willden. sp. pl.* 3, *p.* 543. *Engl. bot.* 587. *Fl. dan.* 1040. *Schkuhr handb.* 2, *p.* 256, *t.* 185.
Nat. of Britain. ♃.

12. A. *pendula*, foliis amplexicaulibus acuminatis, siliquis pendulis ancipitibus, bracteis foliaceis.
Arabis pendula. *Willden. sp. pl.* 3, *p.* 541. *Jacq. hort. vindob.* 3, *p.* 20, *t.* 34.
Nat. of Siberia. ⊙.

13. A. *Turrita*, foliis amplexicaulibus, siliquis planis margine incrassatis, bracteis foliaceis.
Arabis Turrita. *Willden. sp. pl.* 3, *p.* 541. *Engl. bot.* 178.
Nat. of England. ♂.

14. A. *canadensis*, foliis caulinis lanceolatis subdentatis pubescentibus, racemis ebracteatis, siliquis pendulis falcatis.
Arabis canadensis. *Willden. sp. pl.* 3. *p.* 540. [108
Arabis falcata. *Michaux amer.* 2, *p.* 31.
Nat. of North America. ♃.

MACROPODIUM.

Siliqua pedicellata linearis. *Cotyledones* accumbentes. *Calyx* erectus.

1. Macropodium *nivale*.
Cardamine nivalis. *Willden. sp. pl.* 3, *p.* 482. *Pallas it.* 2, *append. n.* 113, *t. U.*
Nat. of Siberia. ♃.

TURRITIS. *Gen. pl.* 1095.

Siliqua elongata anceps: valvis nervosis carinatisve. *Semina* biseriata. *Cotyledones* accumbentes.

1. T. *arvensis,* glaberrima, calyce clauso, siliqua rostrata, foliis amplexicaulibus repandis; summis cordatis integerrimis.
Brassica arvensis. *Willden. sp. pl.* 3, *p.* 546.
Brassica sylvestris fabariæ foliis. *Boccon. sic.* 49, *t.* 25, *f.* 3, 4.
Nat. of the South of Europe. ♃.

109] 2. T. *glabra,* foliis radicalibus dentatis pilosis; caulinis amplexicaulibus integerrimis glabris.
Turritis glabra. *Willden. sp. pl.* 3, *p.* 542. *Curtis lond. Engl. bot.* 777. *Fl dan.* 809.
Nat. of England. ⊙.

3. T. *Loeselii,* foliis runcinatis dentatis pedunculisque hirtis, caule retrorsum hispido.
Sisymbrium Loeselii. *Willden. sp. pl.* 3. *p.* 503. *Jacqu. austr.* 4. *p.* 12, *t.* 324.
Nat. of Austria and Prussia. ⊙.

BARBAREA.

Siliqua tetragono-anceps. *Cotyledones* accumbentes. *Semina* uniseriata. *Calyx* erectus. *Glandulæ* intra filamenta breviora.

1. B. *vulgaris,* foliis inferioribus lyratis: lobo terminali rotundato; superioribus obovatis dentatis.
Erysimum Barbarea. *Willden. sp. pl.* 3, *p.* 509. *Engl. bot.* 443. *Fl. dan.* 985. *Svensk bot.* 194.
Nat. of Britain. ♃.

2. B. *præcox,* foliis inferioribus lyratis; superioribus pinnatifidis: laciniis lineari-oblongis integerrimis.
Erysimum præcox. *Willden. sp. pl.* 3, *p.* 510. *Engl. bot.* 1129.
Nat. of England. ♃.

NASTURTIUM.

Siliqua teretiuscula (quandoque abbreviata): valvis concavis enervibus, nec carinatis. *Cotyledones* accumbentes. [110
Calyx patens.

1. N. *officinale*, foliis pinnatis: foliolis ovatis subcordatis repandis.
Sisymbrium Nasturtium. *Willden. sp. pl.* 3, *p.* 489. *Curtis lond. Engl. bot.* 855.
Nat. of Britain. ♃.

2. N. *sylvestre*, foliis pinnatis: foliolis lanceolatis serratis incisisve.
Sisymbrium sylvestre. *Willden. sp. pl.* 3, *p.* 489. *Curtis lond. Engl. bot.* 2324.
Nat. of Britain. ♃

3. N. *terrestre*, foliis pinnatifidis dentatis glabris, radice fusiformi, petalis calycem æquantibus.
Sisymbrium terrestre. *Smith fl. brit.* 2, *p.* 701. *Curtis lond. Engl. bot.* 1747.
Sisymbrium palustre. *Willden. sp. pl.* 3, *p.* 490.
Nat. of Britain. ⊙.

4. N. *amphibium*, foliis oblongo-lanceolatis pinnatifidis serratisve, petalis calyce longioribus, radice fibrosa.
Sisymbrium amphibium. *Smith fl. brit.* 2, *p.* 702. *Engl. bot.* 1840. *Willden. sp. pl.* 3, *p.* 491.
Nat. of Britain. ♃.

5. N. *pyrenaicum*, siliculis ovalibus, foliis inferioribus lyratis; superioribus pinnatis amplexicaulibus: foliolis linearibus.
Sisymbrium pyrenaicum. *Willden. sp. pl.* 3, *p.* 491. [111
Sisymbrium foliis pinnatis: imorum pinnis oblongis, su-

periorum linearibus integris, siliquis ovalibus oligospermis. *La Chenal in act. helvet.* 4, *p.* 291, *t.* 15.

Nat. of Switzerland and the Pyrenees. ♃.

6. N. *sagittatum*, pubescens, foliis oblongis dentatis: radicalibus hastatis; caulinis sagittatis amplexicaulibus.

Sisymbrium sagittatum. *Willden. sp. pl.* 3, *p.* 493.

Sisymbrium molle. *Jacqu. ic.* 1, *t.* 122.

Nat. of Siberia. ♃.

SISYMBRIUM. *Gen. pl.* 1089.

Siliqua teretiuscula v. angulata. *Cotyledones* incumbentes (quandoque obliquæ), planæ. *Calyx* patens, nunc erectiusculus.

1. S. *officinale*, siliquis rachi adpressis subulatis pubescentibus, foliis runcinatis pilosis, caule hispido.

Erysimum officinale. *Willden. sp. pl.* 3, *p.* 509. *Curtis lond. Engl. bot.* 725. *Svensk bot.* 158.

Nat. of Britain. ⊙.

2. S. *Irio*, foliis runcinatis cauleque glabro, siliquis patenti-erectis.

Sisymbrium Irio. *Willden. sp. pl.* 3, *p.* 503. *Curtis lond. Engl. bot.* 1631.

Nat. of England. ⊙.

112] 3. S. *Columnæ*, foliis runcinatis dentatis cauleque villoso, siliquis erectis.

Sisymbrium Columnæ. *Willden. sp. pl.* 3, *p.* 503. *Jacqu. austr.* 4, *p.* 12, *t.* 323.

Nat. of Germany and Italy. ⊙.

4. S. *orientale*, foliis runcinatis tomentosis, caule lævi. *Willden. sp. pl.* 3, *p.* 504.

Nat. of the Levant. ⊙.

5. S. *pannonicum*, foliis inferioribus runcinatis dentatis;

superioribus pinnatis: pinnis linearibus integerrimis, siliquis rectangule patentibus. *Willden, sp. pl.* 3, *p.* 502.

Sisymbrium pannonicum. *Jacqu. ic.* 1, *t.* 123.

Nat. of Hungary. ⊙.

6. S. *austriacum,* foliis inferioribus lyrato-sinuatis acute dentatis cauleque glabro, siliquis adscendentibus.

Sisymbrium austriacum. *Jacqu. austr.* 3, *p.* 35, *t.* 262.

Nat. of Austria. ⊙.

7. S. *sinapoides,* foliis glabris: radicalibus runcinatis; caulinis pinnatifidis, siliquis striatis erectis pilosiusculis pedunculo laxo duplo longioribus.

Sinapis pyrenaica. *Willden. sp. pl.* 3, *p.* 556. *Jacqu. hort. vindob.* 3, *p.* 50, *t.* 97.

Nat. of the Pyrenees. ♂. [113

8. S. *altissimum,* foliis runcinatis flaccidis: foliolis sublinearibus integerrimis, pedunculis laxis. *Willden. sp. pl.* 3, *p.* 501.

Erysimum monspessulanum; sinapios folio. *Walth. hort.* 135, *t.* 22.

Nat. of Siberia. ⊙.

9. S. *asperum,* siliquis scabris, foliis pinnatifidis glabris: laciniis linearibus subdentatis.

Sisymbrium asperum. *Willden. sp. pl.* 3, *p.* 499.

Sinapi monspessulanum, siliqua aspera hirsuta. *Bauh. hist.* 2, *p.* 858.

Nat. of the South of France. ⊙.

10. S. *supinum,* siliquis axillaribus subsessilibus solitariis, foliis sinuato-pinnatifidis, caule retrorsum pubescente.

Sisymbrium supinum. *Willden. sp. pl.* 3, *p.* 494.

Eruca supina alba, siliqua singulari e foliorum alis erumpente. *Isnard in act. paris.* 1724, *p.* 295, *t.* 18.

Nat. of the South of Europe. ⊙.

11. S. *polyceratium,* siliquis axillaribus aggregatis subulatis subsessilibus, foliis runcinato-sinuatis dentatis acutis.

114] Sisymbrium polyceratium. *Willden. sp. pl.* 3, *p.* 494. *Jacqu. hort. vindob.* 1, *p.* 34, *t.* 79.

Nat. of France and Italy. ⊙.

12. S. *tanacetifolium,* foliis pinnatis: foliolis lanceolatis incisis: extimis confluentibus, petalis calyce majoribus.

Sisymbrium tanacetifolium. *Willden. sp. pl.* 3, *p.* 492.

Eruca tanaceti foliis. *Zanon. hist.* 103, *t.* 72.

Nat. of Italy. ♃.

13. S. *Sophia,* foliis decomposito-pinnatis: pinnulis linearibus: terminali longiore, petalis calyce minoribus.

Sisymbrium Sophia. *Willden. sp. pl.* 3, *p.* 500. *Engl. bot.* 963. *Svensk bot.* 203.

Nat. of Britain. ⊙.

14. S. *millefolium,* foliis supradecompositis tomentosis incanis, petalis calyce majoribus.

Sisymbrium millefolium. *Willden. sp. pl.* 3, *p.* 500.

Sinapis millefolia. *Jacqu. ic.* 1, *t.* 127.

Nat. of the Canary Islands. Mr. *Fr. Masson.* ♄.

15. S. *strictissimum,* foliis lanceolatis petiolatis dentatis pubescentibus, siliquis linearibus.

115] Sisymbrium strictissimum. *Willden. sp. pl.* 3, *p.* 506. *Jacqu. austr.* 2, *p.* 56, *t.* 194.

Nat. of Switzerland and Italy. ♃

ERYSIMUM. *Gen. pl.* 1090.

Siliqua tetragona. *Semina* immarginata. *Cotyledones* incumbentes. *Stigma* capitatum, nunc emarginatum lobulis patentibus. *Calyx* clausus.

1. E. *cheiranthoides,* foliis lanceolatis integerrimis nunc paucidentatis: pilis stellato-tripartitis, siliquis erectiusculis: pedunculis patulis; stigmate indiviso subsessili.

Erysimum cheiranthoides. *Willden. sp. pl.* 3, *p.* 311. *Engl. bot.* 942.
Nat. of Britain. ⊙.

2. E. *repandum*, foliis lanceolatis repando-dentatis: pilis bipartitis, siliquis patulis torulosis; stigmate emarginato.
Erysimum repandum. *Willden. sp. pl.* 3, *p.* 510. *Jacqu. austr.* 1, *p.* 16, *t.* 22.
Nat. of Spain and Austria. ⊙.

3. E. *diffusum*, foliis lanceolato-linearibus integerrimis v. paucidentatis: pilis bipartitis, unguibus calyce longioribus; laminis obovato-oblongis, siliquis erectiusculis elongatis; stigmate bilobo; stylo brevissimo.
Cheiranthus alpinus. *Linn. mant.* 93. *Jacqu. austr.* 1, *p.* 48, *t.* 75.
Erysimum diffusum. *Willden. sp. pl.* 3, *p.* 512. [116
Nat. of the South of Europe. ♃.

4. E. *angustifolium*, foliis lineari-lanceolatis integris, siliquis erectis brevissime pedunculatis stylo duplo longioribus.
Erysimum angustifolium. *Willden. sp. pl.* 3, *p.* 513. *Waldst. et Kitaib. hung.* 1, *p.* 101, *t.* 98.
Nat. of Hungary. ⊙.

5. E. *sessiliflorum*, foliis linearibus integerrimis, siliquis sessilibus stylo paulo longioribus.
Cheiranthus quadrangulus. *Willden. sp. pl.* 3, *p.* 525. *L'Herit. stirp.* 1, *p.* 91, *t.* 44.
Nat. of Siberia. ♃.

6. E. *lanceolatum*, foliis lanceolatis: inferioribus dentatis, unguibus calyce longioribus; laminis orbiculato-obovatis, stigmate sessili.
Cheiranthus erysimoides. *Willden. sp. pl.* 3, *p.* 514. *Jacqu. austr.* 1, *p.* 48, *t.* 74.
Nat. of the South of Europe. ♂.

7. E. *helveticum*, foliis lanceolatis integerrimis: pilis

plerisque bipartitis, siliquis erectiusculis; stigmate pedicellato emarginato.

Cheiranthus helveticus. *Willden. sp. pl.* 3, *p.* 515. *Jacqu. hort. vindob.* 3, *p.* 9, *t.* 9.

117] *Nat.* of Switzerland. ♂.

8. E. *odoratum*, foliis lanceolatis dentatis: pube tripartita, laminis orbiculato-obovatis, siliquis erectis, stigmate bilobo.

Erysimum odoratum. *Willden. sp. pl.* 3, *p.* 512.

Erysimum hieracifolium. *Jacqu. austr.* 1, *p.* 47, *t.* 73.

Nat. of Austria. ⊙.

9. E. *Alliaria*, foliis cordatis petiolatis dentato-incisis.

Erysimum Alliaria. *Willden. sp. pl.* 3, *p.* 510. *Curtis lond. Engl. bot.* 796. *Fl. dan.* 935. *Svensk bot.* 208.

Nat. of Britain. ♃.

10. E. *orientale*, foliis cordatis amplexicaulibus glabris; radicalibus scabris integerrimis.

Brassica orientalis. *Willden. sp. pl.* 3, *p.* 545. *Engl. bot.* 1804.

Nat. of England. ⊙.

NOTOCERAS.

Siliqua valvis apice cornigeris. *Cotyledones* accumbentes. *Stigma* capitatum. *Calyx* erectiusculus basi æqualis.

1. N. *canariensis*, siliquis tetragonis bicornibus.

Erysimum bicorne. *Willden. sp. pl.* 3, *p.* 514.

118] *Nat.* of the Canary Islands. Mr. *Fr. Masson.* ⊙.

CHEIRANTHUS. *Gen. pl.* 1091.

Siliqua compressa v. anceps. *Cotyledones* accumbentes. *Calyx* clausus, foliolis oppositis basi saccatis. *Stigma* stylo insidens, bilobum, lobis patentibus v. capitatum.

1. C. *Cheiri,* foliis lanceolatis integerrimis: pube (dum adsit) bipartita appressa, siliquis linearibus; stigmatis lobis recurvis.

Cheiranthus cheiri. *Willden. sp. pl.* 3, *p.* 516.

α. flore simplici.

β. flore pleno.

Nat. of the South of Europe. ♂. ♃.

2. C. *mutabilis,* foliis lanceolatis argure serratis canescentibus: pube stellari, siliquis linearibus, caule fruticoso.

Cheiranthus mutabilis. *Willden. sp. pl.* 3, *p.* 517. *Curtis magaz.* 195.

Cheiranthus longifolius. *Venten. malmais.* 83.

Nat. of Madeira. Mr. *Francis Masson.* ♄.

3. C. *tenuifolius,* foliis filiformi-linearibus integerrimis incanis: pube bipartita adpressa, caule fruticoso.

Cheiranthus tenuifolius. *Willden. sp. pl.* 3, *p.* 517.

Nat. of Madeira. Mr. *Francis Masson.* ♄.

MATHIOLA. [119

Siliqua (teres vel compressa) coronata *Stigmate* conniventi bilobo, lobis vel dorso incrassatis cotyledonibus tunc incumbentibus; vel basi cuspide stipatis. *Calyx* clausus. *Filamenta* longiora dilatata.

* *Stigmatis lobis dorso incrassatis, subsimplicibusve.*

1. M. *incana,* foliis lanceolatis integerrimis, siliquis cylindricis eglandulosis.

Cheiranthus incanus. *Willden. sp. pl.* 3, *p.* 520. *Engl. bot.* 1935.

α. Leucojum incanum majus. *Bauh. pin.* 200.

β. Cheiranthus *coccineus,* foliis lanceolatis undatis, caule erecto indiviso. *Mill. dict.*

γ. Cheiranthus *albus,* foliis lanceolatis integerrimis obtusis incanis, ramis floriferis axillaribus, caule suffruticoso. *Mill. dict.*

δ. Cheiranthus annuus. *Willden. sp. pl.* 3, *p.* 520.

ε. Cheiranthus *glabrus*, foliis lanceolatis acutis petiolatis viridibus, caule suffruticoso. *Mill. dict.*

Nat. of England. ♃.

2. M. *fenestralis*, foliis confertis obovatis tomentosis, caule indiviso.

Cheiranthus fenestralis. *Willden. sp. pl.* 3, *p.* 520. *Jacqu. hort. vindob.* 2, *p.* 84, *t.* 179.

Nat. ♂.

120] 3. M. *sinuata*, foliis tomentosis: inferioribus sinuatis, siliquis compressis muricatis.

Cheiranthus sinuatus. *Willden. sp. pl.* 3, *p.* 524. *Engl. bot.* 462.

Nat. of England. ♂.

4. M. *odoratissima*, foliis tomentosis lyrato-sinuatis, siliquis compressis tomentosis lævibus.

Cheiranthus odoratissimus. *Willden. sp. pl.* 3, *p.* 524.

Nat. of the North of Persia. ♄.

5. M. *tristis*, foliis linearibus integerrimis subsinuatisve, floribus sessilibus.

Cheiranthus tristis. *Willden. sp. pl.* 3, *p.* 522. *Botan. magaz.* 729.

Nat. of the South of Europe. ♄.

** *Siliquis tricuspidatis.*

6. M. *tricuspidata*, foliis sinuatis, siliquæ cuspidibus acutis subæqualibus.

Cheiranthus tricuspidatus. *Willden. sp. pl.* 3, *p.* 523. *Schkuhr handb.* 2, *p.* 250, *t.* 184.

Nat. of Barbary. ☉.

121] 7. M. *parviflora*, foliis lanceolatis repando-dentatis, siliquis sessilibus: cuspidibus lateralibus acutis medio obtuso longioribus.

Cheiranthus parviflorus. *Willden. sp. pl.* 3, *p.* 519.
Nat. of Morocco. ⊙.

MALCOMIA.

Siliqua teres, bivalvis. *Stigma* acutum. *Cotyledones* incumbentes planæ. *Calyx* clausus.

1. M. *maritima,* foliis obovatis lanceolatisve integerrimis v. obsolete dentatis: pube adpressa 2—4-partita, siliquis pedunculatis, calycibus deciduis.
Cheiranthus maritimus. *Willden. sp. pl.* 3, *p.* 518. *Curtis magaz.* 166.
Nat. of the South of Europe. ⊙.

2. M. *africana,* foliis lanceolatis dentatis: pube stellari laxa, siliquis sessilibus, calyce persistenti.
Hesperis africana. *Willden. sp. pl.* 3, *p.* 532.
Leucojum gallicum, folio halimi. *Bocc. sic.* 77, *t.* 42, *f.* 1.
Nat. of Africa. ⊙.

3. M. *littorea,* foliis lanceolatis integris vel dentatis siliquisque tomentosis incanis.
Cheiranthus littoreus. *Willden. sp. pl.* 3, *p.* 521.
Leucojum maritimum minus. *Clus. hist.* 1, *p.* 298.
Nat. of the South of Europe. ⊙.

HESPERIS. *Gen. pl.* 1093. [122

Siliqua 4-gona v. anceps. *Stigma* subsessile, lobis conniventibus. *Cotyledones* incumbentes, planæ. *Calyx* clausus.

1. H. *tristis,* petalorum laminis oblongis obliquis, siliquis divaricatis ancipitibus margine incrassatis.
Hesperis tristis. *Willden. sp. pl.* 3, *p.* 530. *Botan. magaz.* 730.
Nat. of Austria and Hungary. ♂.

2. H. *matronalis,* petalorum laminis obovatis, siliquis erectis torosis margine simplicibus.
Hesperis matronalis. *Willden. sp. pl.* 3, *p.* 531.
Hesperis inodora. *Willden. sp. pl.* 3, *p.* 531. *Engl. bot.* 731.
α. flore simplici.
flore pleno albo.
β. flore pleno purpureo.
Nat. of England. ♃.

ERUCARIA. *Gærtn. sem.* 2, *p.* 298.

Siliqua biarticulata: articulo inferiore bivalvi polyspermo; superiore evalvi oligospermo. *Cotyledones* planæ (rectæ v. curvatæ).

1. Erucaria *aleppica.*
Erucaria aleppica. *Venten. cels.* 64.
Cordylocarpus lævigatus. *Willden. sp. pl.* 3, *p.* 563.
123] Bunias myagroides. *Willden. sp. pl.* 3, *p.* 414.
Nat. of the Levant. ⊙.

BRASSICA. *Gen. pl.* 1096.

Siliqua bivalvis (rostro sterili v. monospermo). *Cotyledones* conduplicatæ. *Calyx* clausus.

1. B. *Napus,* radice caulescente fusiformi, foliis lævibus: superioribus cordato-lanceolatis amplexicaulibus; inferioribus lyratis dentatis. *Willden. sp. pl.* 3, *p.* 547. *Engl. bot.* 2146.
Nat. of Britain. ♂.

2. B. *Rapa,* radice caulescente orbiculari depressa carnosa, foliis radicalibus lyratis scabris; caulinis integerrimis lævibus. *Willden. sp. pl.* 3, *p.* 548. *Engl. bot.* 2176.
Nat. of England. ♂.

3. B. *oleracea,* radice caulescente tereti carnosa, foliis

omnibus glabris glaucis repandis lobatisve. *Willden. sp. pl.* 3, *p.* 548. *Engl. bot.* 637. *Select. specim.* 4, 5.

α. *capitata.* Brassica capitata alba. *Bauh. pin.* 111.
β. *rubra.* Brassica capitata rubra. *Bauh. pin.* 111.
γ. *sabauda.* Brassica alba crispa. *Bauh. pin.* 111.
δ. *sabellica.* Brassica fimbriata. *Bauh. pin.* 112.
ε. *botrytis.* Brassica cauliflora. *Bauh. pin.* 111.
ζ. Brassica italica broccoli dicta. *Mill. dict.*
η. *Napobrassica.* Brassica radice napiformi. *Tourn.* [124 *inst.* 219.

Nat. of the English sea-coasts. ♂.

4. B. *chinensis,* foliis ovalibus subintegerrimis; floralibus amplexicaulibus lanceolatis, calycibus ungue petalorum longioribus. *Willden. sp. pl.* 3, *p.* 550.

Nat. of China. ☉.

5. B. *Erucastrum,* foliis runcinatis, caule hispido, siliquis lævibus. *Willden. sp. pl.* 3, *p.* 551. *Bulliard herb. de la France,* 331.

Nat. of the South of Europe. ☉.

6. B. *Eruca,* foliis lyratis, caule hirsuto, siliquis glabris: rostro compresso articulato.

Brassica Eruca. *Willden. sp. pl.* 3, *p.* 551. *Bulliard herb. de la France,* 313. *Schkuhr handb.* 2, *p.* 263, *t.* 186.

Nat. of Switzerland and Austria. ☉.

7. B. *monensis,* foliis pinnatifidis, caule nudiusculo glabro, siliquis lævibus: rostro monospermo.

Brassica monensis. *Huds. angl.* 291.

Sisymbrium monense. *Willden. sp. pl.* 3, *p.* 496. *Engl. bot.* 962.

Nat. of Britain. ☉.

8. B. *elongata,* foliis petiolatis: inferioribus sinuato- [125 pinnatifidis hispidis; superioribus glabris dentatis, siliquis torulosis tetragonis cuspidatis. *Willden. sp. pl.* 3, *p.* 552.

Brassica elongata. *Waldst. et Kitaib. hung.* 1, *p.* 26, *t.* 28.
Nat. of Hungary. ♂.

9. B. *campestris*, radice cauleque tenui, foliis cordatis acuminatis amplexicaulibus: inferioribus lyratis dentatis subhispidis. *Willden. sp. pl.* 3, *p.* 546. *Engl. bot.* 2234.
Nat. of England. ☉.

10. B. *alpina*, foliis caulinis cordato-sagittatis amplexicaulibus; radicalibus ovatis, petalis erectis. *Willden. sp. pl.* 3, *p.* 547. *Villars dauph.* 3, *p.* 330, *t.* 36.
Nat. of Germany and Switzerland. ♃.

SINAPIS. *Gen. pl.* 1097.

Siliqua bivalvis (nunc biarticulata articulo superiore evalvi). *Cotyledones* conduplicatæ. *Calyx* patens.

1. S. *arvensis*, siliquis multangulis toroso-turgidis rostro ancipiti longioribus. *Willden. sp. pl.* 3, *p.* 554. *Curtis lond. Engl. bot.* 1748.
Nat. of Britain. ☉.

2. S. *orientalis*, siliquis retrorsum hispidis apice subtetragonis compressis. *Willden. sp. pl.* 3, *p.* 554. *Schkuhr handb.* 1, *p.* 264, *t.* 186.
126] *Nat.* of the Levant. ☉.

3. S. *alba*, siliquis hispidis: rostro obliquo longissimo ensiformi. *Willden. sp. pl.* 3, *p.* 555. *Curtis lond. Engl. bot.* 1677.
Nat. of Britain. ☉.

4. S. *Allioni*, siliquis ovato-oblongis patulis, foliis pinnatifidis laciniis incisis. *Willden. sp. pl.* 3, *p.* 557. *Jacqu. hort. vindob.* 2, *p.* 79, *t.* 168.
Raphanus crucoides. *Linn. suppl.* 299.
Nat. ☉.

5. S. *chinensis*, siliquis lævibus subarticulatis patulis, foliis lyrato-runcinatis subhirsutis. *Willden. sp. pl.* 3, *p.* 557.

Sinapis siliquis glabris subarticulatis, &c. *Arduin. spec.* 1, *p.* 23, *t.* 10.

Nat. of China. ⊙.

6. S. *juncea*, ramis fasciculatis, foliis summis lanceolatis integerrimis. *Willden. sp. pl.* 3, *p.* 557. *Jacqu. hort. vindob.* 2, *p.* 80, *t.* 171.

Nat. of China. ⊙.

7. S. *lævigata*, siliquis lævibus patulis, foliis lyratis glabris: summis lanceolatis, caule lævi. *Willden. sp. pl.* 3, *p.* 559. [127

Nat. of Spain and Portugal. ♂.

8. S. *nigra*, siliquis adpressis glabris tetragonis: stylo subulato.

Sinapis nigra. *Willden. sp. pl.* 3, *p.* 555. *Engl. bot.* 969. *Svensk bot.* 83.

Nat. of Britain. ⊙.

9. S. *pubescens*, siliquis pubescentibus erectis: rostro compresso, foliis lyratis villosis. *Willden. sp. pl.* 3, *p.* 556.

Sinapis hirsuta caulibus frutescentibus, &c. *Arduin. spec.* 1, *p.* 21, *t.* 9.

Nat. of Sicily. ♃.

10. S. *erucoides*, siliquis lævibus æqualibus, foliis lyratis oblongis glabris, caule glabro. *Willden. sp. pl.* 3, *p.* 557. *Jacqu. hort. vindob.* 2, *p.* 80, *t.* 170.

Nat. of the South of Europe. ⊙.

11. S. *frutescens*, siliquis linearibus lævibus, foliis inferioribus oblongis dentatis; superioribus lanceolatis integris, caule glabro frutescente. *Willden. sp. pl.* 3, *p.* 559.

Nat. of Madeira. Mr. *Fr. Masson.* ♄.

12. S. *tenuifolia*, siliquis linearibus glabris brevissime [128

rostratis erectis; pedunculis patulis, foliis lanceolatis acutissimis pinnatifidis bipinnatifidisve, caule glabro.

Sisymbrium tenuifolium. *Willden. sp. pl.* 3, *p.* 493. *Engl. bot.* 525.

Brassica muralis. *Curtis lond.*

Nat. of England. ♃.

13. S. *muralis,* siliquis linearibus glabris brevissime rostratis erectiusculis; pedunculis patulis, foliis sinuatis glabris, caule patulo piloso.

Sisymbrium murale. *Willden. sp. pl.* 3, *p.* 496. *Engl. bot.* 1090.

Nat. of England. ⊙.

14. S. *incana,* siliquis biarticulatis adpressis, foliis scabris: inferioribus lyratis; summis lanceolatis.

Sinapis incana. *Willden. sp. pl.* 3, *p.* 558. *Jacqu. hort. vindob.* 2, *p.* 79, *t.* 169.

Myagrum hispanicum. *Willden. sp. pl.* 3, *p.* 407.

Nat. of France, Spain, and Portugal. ♂.

15. S. *hispanica,* siliquis biarticulatis erectis, foliis bipinnatifidis: laciniis linearibus.

Sinapis hispanica. *Willden. sp. pl.* 3, *p.* 558.

Nat. of Spain. ⊙.

129] RAPHANUS. *Gen. pl.* 1098.

Siliqua evalvis. *Cotyledones* conduplicatæ. *Calyx* clausus.

1. R. *sativus,* foliis lyratis, siliquis teretibus torosis bilocularibus. *Willden. sp. pl.* 3, *p.* 560.

α. Raphanus minor oblongus. *Bauh. pin.* 96.

β. Raphanus major orbicularis vel rotundus. *Bauh. pin.* 96.

γ. Raphanus niger. *Bauh. pin.* 96.

Nat. ⊙.

2. R. *Raphanistrum,* foliis simpliciter lyratis, siliquis unilocularibus articulatis striatis.

Raphanus Raphanistrum. *Willden. sp. pl.* 3, *p.* 560. *Curtis lond. Engl. bot.* 856.

Nat. of Britain. ⊙.

3. R. [*maritimus,*] foliis interrupte lyratis, siliquis unilocularibus articulatis striatis.

Raphanus maritimus. *Engl. bot.* 1643.

Nat. of Britain. ♃.

CHORISPERMUM.

Siliqua evalvis bilocularis, in segmenta monosperma clausa discedens. *Cotyledones* planæ, accumbentes. *Stigma* simplex.

1. C. *tenellum,* siliquis foliisque glabris; superioribus lanceolatis dentatis; infimis pinnatifidis.

Raphanus tenellus. *Willden. sp. pl.* 3, *p.* 561. *Pallas it.* 3, *p.* 741, *t.* L. *f.* 3. [130

Nat. of Siberia. ⊙.

CLEOME. *Gen. pl.* 1099.

Calyx 4-phyllus. *Petala* 4. *Stam.* 4—40. *Siliqua* unilocularis, bivalvis, polysperma. *Semina* exalbuminosa.

1. C. *Chelidonii,* polyandra: filamentis apice latioribus, foliis 5—9-natis: foliolis utrinque scabris pilis adpressis, racemis terminalibus.

Cleome Chelidonii. *Willden. sp. pl.* 3, *p.* 567.

Nat. of the East Indies. ⊙.

2. C. *viscosa,* staminibus 15—20, foliis quinatis ternatisque, siliquis oblique striatis, seminibus striis transversis elevatis.

Cleome viscosa. *Willden. sp. pl.* 3, *p.* 566.

Sinapistrum zeylanicum triphyllum et pentaphyllum viscosum flore flavo. *Martyn dec.* 25.

Nat. of Ceylon. ⊙.

3. C. *pentaphylla,* floribus gynandris: staminibus medio stipitis insertis, foliis quinatis passim floralibusque ternatis, caule inermi.

Cleome pentaphylla. *Willden. sp. pl.* 3, *p.* 564. *Jacqu. hort. vindob.* 1, *p.* 9, *t.* 24.

Nat. of both Indies. ⊙.

131] 4. C. *gigantea,* inermis hexandra: staminibus juxta basin stipitis longissimi insertis, foliis 7—9-natis hirsutis, racemo ebracteato.

Cleome gigantea. *Willden. sp. pl.* 3, *p.* 567. *Jacqu. obs.* 4, *p.* 1, *t.* 76.

Cleome viridiflora. *Schreb. nov. act. ac. nat. cur.* 4, *p.* 136, *t.* 3.

Nat. of South America. ♄.

5. C. *spinosa,* aculeata hexandra: staminibus juxta basin stipitis germine aliquoties longioris insertis, foliis 7—5-natisque acuminatis, bracteis racemi simplicibus cordatis.

Cleome spinosa. *Willden. sp. pl.* 3, *p.* 568 (excluso synonymo Milleri).

Cleome Erucago. *Mill. dict.*

Nat. of the West Indies. ⊙.

6. C. *Houstoni,* aculeata glanduloso-pubescens hexandra: staminibus basi stipitis germine brevioris insertis, foliis quinatis ternatisque; floralibus simplicibus, siliquis breviter pedicellatis, stigmate dilatato.

Sinapistrum indicum spinosum, flore carneo folio trifido vel quinquefido. *Martyn dec.* 45.

Nat. of the West Indies. ⊙.

132] 7. C. *violacea,* hexandra, calyce petalisque inæqualibus, foliis ternatis lanceolato-linearibus; floralibus omnibus simplicibus, siliquis teretiusculis, seminibus glabriusculis.

Cleome violacea. *Willden. sp. pl.* 3, *p.* 569. *Schkuhr handb.* 2, *p.* 292, *t.* 189, b.

Nat. of Portugal. ⊙.

8. C. *Ornithopodioides,* hexandra, foliis ternatis oblongo-

lanceolatis obtusis; floralibus plerisque simplicibus, siliquis pendulis sessilibus torulosis, seminibus glabris.

Cleome ornithopodioides. *Willden. sp. pl.* 3, *p.* 568.

Sinapistrum orientale triphyllum, ornithopodii siliquis. *Dill. elth.* 359, *t.* 266, *f.* 345.

Nat. of the Levant. ⊙.

9. C. *arabica*, hexandra, foliis ternatis lineari-lanceolatis, siliquis pendulis, seminibus hirsutissimis.

Cleome arabica. *Willden. sp. pl.* 3, *p.* 569. *Linn. fil. fascic. t.* 8.

Siliquaria glandulosa. *Forsk. descr.* 78, *ic. t.* 16, B.

Nat. of Arabia. ⊙.

10. C. *monophylla*, hexandra, foliis simplicibus lanceolatis pubescentibus: basi obtusa.

. Cleome monophylla. *Willden. sp. pl.* 3, *p.* 571.

Sinapistrum zeylanicum viscosum, folio solitario flore flavo siliqua tenui. *Burm. zeyl.* 217, *t.* 100, *f.* 2.

Nat. of the East Indies. ⊙. [133

11. C. *procumbens*, hexandra glaberrima, foliis simplicibus lanceolatis, caule diffuso.

Cleome procumbens. *Willden. sp. pl.* 3, *p.* 571. *Jacqu. amer.* 189, *t.* 120.

Nat. of the West Indies. ♃.

GENERA ET SPECIES QUÆDAM

PLANTARUM LEGUMINOSARUM,

QUÆ

IN HORTO KEWENSI COLUNTUR.

[*Extracted from 'Hortus Kewensis,' 2nd Edition, Vol. III, pp.* 1—22;
Vol. IV, pp. 266—338; *and Vol. V, pp.* 460—468.]

LONDON.

1811-1812-1813.

DECANDRIA. [iii. 1

MONOGYNIA.

EDWARDSIA.

Salisb. in linn. soc. transact. 9, *p.* 298. *Brown mss.*

Cal. 5-dentatus. *Cor.* papilionacea. *Legumen* tetrapterum, polyspermum.

1. E. *grandiflora*, foliolis (13—19) lanceolato-oblongis.
Edwardsia grandiflora. *Salisb. in linn. soc. transact.* 9, *p.* 299.
Sophora tetraptera. *Willden. sp. pl.* 2, *p.* 499. *Curtis magaz.* 167.
Nat. of New Zealand. The Right Hon. Sir *Joseph Banks*, Bart. K.B. ♄.

2. E. *microphylla*, foliolis (25—41) obovatis.
Edwardsia microphylla. *Salisb. in linn. soc. transact.* 9, *p.* 299.
Sophora microphylla. *Willden. sp. pl.* 2, *p.* 499. *Jacqu. hort. schœnbr.* 3, *p.* 10, *t.* 269.
Nat. of New Zealand. The Right Hon. Sir *Joseph Banks*, Bart. K.B. ♄.

SOPHORA. *Gen. pl.* 694. *Brown mss.* [iii. 2

Cal. 5-dentatus. *Cor.* papilionacea. *Legumen* moniliforme, apterum, polyspermum.

1. S. *tomentosa*, arborea, foliolis subrotundis ovalibusve obtusissimis utrinque calycibusque tomentosis, racemo terminali elongato. *Brown mss.*

Sophora tomentosa. *Willden. sp. pl.* 2, *p.* 500.

Sophora occidentalis. *Willden. sp. pl.* 2, *p.* 500. *Trew ehret.* 27, *t.* 59.

Nat. of both Indies. ♄.

2. S. *japonica*, arborea, foliolis oblongo-ovatis acutis leguminibusque glabris. *Brown mss.*

Sophora japonica. *Willden. sp. pl.* 2, *p.* 500. *Andrews's reposit.* 585.

Nat. of Japan and China. ♄.

3. S. *alopecuroides*, herbacea, foliolis oblongis: adultis subtus sericeis. *Brown mss.*

Sophora alopecuroides. *Willden. sp. pl.* 2, *p.* 499. *Pallas astragal.* 117, *t.* 87.

Nat. of the Levant. ♃.

4. S. *flavescens*, herbacea, foliolis ovato-oblongis glabriusculis. *Brown mss.*

Sophora flavescens. *Willden. sp. pl.* 2, *p.* 499.

Nat. of Siberia. ♃.

iii. 3]

ORMOSIA.

Jackson in linn. soc. transact. 10, *p.* 360. *Brown mss.*

Cal. 5-fidus, bilabiatus. *Cor.* papilionacea. *Stigmata* 2, approximata, obtusa: altero unilaterali! *Legumen* compressum, lignosum, 1—3-spermum.

1. O. *dasycarpa*, foliolis (9—11) acuminatis utrinque glabris, leguminibus tomentosis. *Brown mss.*

Ormosia dasycarpa. *Jackson in linn. soc. transact.* 10, *p.* 362, *t.* 26.

Sophora monosperma. *Willden. sp. pl.* 2, *p.* 501.

Nat. of the West Indies. ♄.

ANAGYRIS. *Gen. pl.* 695.

Cal. 5-dent. bilabiatus. *Cor.* papilionacea, *carina* dipetala *alis* longior *vexillum* superantibus. *Legumen* compressum, polyspermum.

1. A. *fœtida, Willden. sp. pl.* 2, 507. *Clus. hist.* 1, *p.* 93.
Nat. of Spain and Italy. ♄.

THERMOPSIS. *Brown mss.*

Cal. oblongus, semi-5-fidus, bilabiatus, postice convexus, basi attenuata. *Cor.* papilionacea, petalis longitudine subæqualibus: *vexillum* lateribus reflexis; *carina* obtusa. *Stamina* persistentia. *Legumen* compressum, lineare, polyspermum.

1. T. *lanceolata,* foliolis oblongo-lanceolatis, stipulis lanceolatis petiolo duplo longioribus, pedicellis verticillatis. *Brown mss.*
Podalyria lupinoides. *Willden. sp. pl.* 2, *p.* 504. [iii. 4
Sophora lupinoides. *Pallas astragal.* 119, *t.* 89.
Nat. of Siberia. ♃.

VIRGILIA.

Lamarck illustr. t. 326. *Pers. synops.* 1, *p.* 453. *Brown mss.*

Cal. 5-fidus. *Cor.* papilionacea, petalis longitudine subæqualibus: *vexillum* lateribus non reflexis. *Stigma* imberbe. *Legumen* compressum, oblongum, polyspermum.

1. V. *aurea,* staminibus persistentibus, germinibus tomentosis, foliolis ovalibus obtusis muticis. *Brown mss.*
Podalyria aurea. *Willden. sp. pl.* 2, *p.* 502.
Robinia subdecandra. *L'Herit. stirp. nov.* 1, *p.* 157, *t.* 75.
Nat. of Abyssinia. ♄.

2. V. *intrusa*, staminibus persistentibus, germinibus glabris, calycis basi intrusa, foliolis ovalibus obtusis mucronulatis. *Brown mss.*

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

3. V. *capensis*, staminibus deciduis basi lanatis, germinibus tomentosis, carina acuminata, foliolis lanceolatis. *Brown mss.*

Podalyria capensis. *Willden. sp. pl.* 2, *p.* 501. *Andrews's reposit.* 347.

Nat. of the Cape of Good Hope. ♄.

iii. 5]

CYCLOPIA.

Venten. dec. gen. nov. p. 8. *Brown mss.* Ibettsonia. *Sims in botan. magaz.* 1259.

Cal. 5-fidus, inæqualis, basi intrusa. *Cor.* papilionacea: *vexillum* rugis longitudinalibus! *alæ* plica transversa! *Stamina* decidua. *Stigma* hinc barbatum. *Legumen* compressum, polyspermum.

1. C. *genistoides*, foliolis subulatis laciniisque calycis muticis, bracteis oblongo-ovatis pedunculo brevioribus, ramulis glabris. *Brown mss.*

Ibettsonia genistoides. *Botan. magaz.* 1259.

Gompholobium maculatum. *Andrews's reposit.* 427.

Podalyria genistoides. *Willden. sp. pl.* 2, *p.* 502.

Nat. of the Cape of Good Hope. ♄.

BAPTISIA.

Venten. dec. gen. nov. p. 9. *Brown mss.* Podalyria. *Michaux amer.* 1, *p.* 263. Podalyriæ sp. *Lamarck illustr. t.* 327, *f.* 1. *Willden. sp. pl.* 2, *p.* 501.

Cal. semi-4—5-fidus, bilabiatus. *Cor.* papilionacea, petalis longitudine subæqualibus: *vexillum* lateribus reflexis. *Stamina* decidua. *Legumen* ventricosum, pedicellatum, polyspermum.

1. B. *perfoliata,* foliis perfoliatis integerrimis subrotundis. *Brown mss.*
Rafnia perfoliata. *Willden. sp. pl.* 3, *p.* 949.
Crotalaria Perfoliatæ folio. *Dill. elth.* 122, t. 102, *f.* 122.
Nat. of Carolina. ♃. [iii. 6

2. B. *australis,* foliis ternatis petiolatis: foliolis cuneato-lanceolatis, stipulis petiolo longioribus lanceolatis. *Brown mss.*
Podalyria australis. *Willden. sp. pl.* 2, *p.* 503. *Venten. Cels.* 56.
Sophora australis. *Botan. magaz.* 509.
Sophora cœrulea. *Trew pl. rar.* 6, *t.* 14.
Nat. of Carolina. ♃.

3. B. *tinctoria,* foliis ternatis petiolatis: foliolis subrotundo-obovatis, stipulis setaceis obsoletis. *Brown mss.*
Podalyria tinctoria. *Willden. sp. pl.* 2, *p.* 503. *Botan. magaz.* 1099.
Nat. of North America. ♃.

4. B. *alba,* foliis ternatis petiolatis: foliolis elliptico-oblongis, stipulis deciduis subulatis petiolo brevioribus, germinibus glabris. *Brown mss.*
Podalyria alba. *Willden. sp. pl.* 2, *p.* 503. *Botan. magaz.* 1177.
Nat. of North America. ♃.

PODALYRIA.

Salisb. parad. 7. *Brown mss.* Podalyriæ sp. *Lamarck illustr. t.* 327, *f.* 3, 4.

Cal. 5-fidus, inæqualis, basi intrusa. *Car.* papilionacea, *vexillo* majore. *Stamina* persistentia, basi connata. [iii. 7 *Legumen* ventricosum, polyspermum.

1. P. *myrtillifolia,* foliis oblongo-obovatis utrinque calycibusque sericeis, pedunculis unifloris folia subæquantibus. *Brown mss.*

Podalyria myrtillifolia. *Willden. sp. pl.* 2, *p.* 505.
Nat. of the Cape of Good Hope. ♄.

2. P. *sericea,* foliis oblongo-obovatis utrinque calyceque sericeis pedunculo unifloro aliquoties longioribus. *Brown mss.*
Sophora sericea. *Andrews's reposit.* 440.
Nat. of the Cape of Good Hope. Mr. *David Nelson.* ♄.

3. P. *biflora,* foliis ovalibus utrinque sericeis pedunculo bifloro brevioribus, calycibus tomentosis scabris. *Brown mss.*
Podalyria bifloria. *Willden. sp. pl.* 2, *p.* 505. *Botan. magaz.* 753.
Podalyria argentea. *Salisb. parad.* 7.
Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

4. P. *calyptrata,* foliis ovalibus obovatisque pubescentibus: subtus reticulatis; adultis non sericeis, pedunculis unifloris folia subæquantibus, calycibus villosis: limbo scarioso reflexo. *Brown mss.*
Podalyria calyptrata. *Willden. sp. pl.* 2, *p.* 504.
Nat. of the Cape of Good Hope. ♄.

iii. 8] 5. P. *hirsuta,* foliis villosis petiolatis: superioribus ovatis; inferioribus subrotundis, pedunculis unifloris, calycibus villosis: laciniis longitudine alarum. *Brown mss.*
Podalyria hirsuta. *Willden. sp. pl.* 2, *p.* 505.
Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

6. P. *cordata,* foliis cordatis subrotundis subsessilibus villosissimis, pedunculis bifloris, calycis villosi laciniis brevioribus alis. *Brown mss.*
Sophora cordata. *Thunb. prod.* 79?
Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

CHORIZEMA.

Labillard. voy. 1, *p.* 405. *Brown mss.*

Cal. semi-5-fidus, bilabiatus. *Cor.* papilionacea, *carina* ventricosa *alis* brevior. *Stylus* brevis, uncinatus. *Stigma* obliquum, obtusum. *Legumen* ventricosum, polyspermum.

1. C. *ilicifolia,* foliis pinnatifido-dentatis spinosis oblongo-lanceolatis; acumine integro dentibus longiore, bracteis ad apicem pedicelli. *Brown mss.*
Chorizema ilicifolia. *Labillard. voy.* 1, *p.* 405, *t.* 21, *nov. holl.* 2, *p.* 120.
Chorozema ilicifolium. *Smith in linn. soc. transact.* 9, *p.* 251.
Nat. of the South-west coast of New Holland. ♄.

2. C. *nana,* foliis sinuato-dentatis spinosis oblongis obtusis, bracteis infra apicem pedicelli. *Brown mss.*
Chorizema nana. *Sims in botan. magaz.* 1032.
Pultenæa nana. *Andrews's reposit.* 434.
Nat. of the South-west coast of New Holland. [iii. 9
Robert Brown. ♄.

3. C. *rhombea,* foliis integerrimis planis mucronatis: inferioribus rhombeo-orbiculatis; summis elliptico-lanceolatis, pedunculis paucifloris. *Brown mss.*
Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

PODOLOBIUM. *Brown mss.*

Cal. 5-fidus, bilabiatus. *Cor.* papilionacea, *carina* compressa longitudine *alarum* subæquantium *vexillum* explanatum. *Germen* simplici serie 4-spermum. *Stylus* adscendens. *Stigma* simplex. *Legumen* pedicellatum, lineari-oblongum, modice ventricosum, intus læve.

1. P. *trilobatum*, foliis oppositis spinoso-dentatis trilobis: basi transversa; lobis lateralibus terminali dentato multoties brevioribus, germine sericeo. *Brown mss.*

Chorozema trilobatum. *Smith in linn. soc. transact.* 9, *p.* 253.

Pultenæa ilicifolia. *Andrews's reposit.* 320.

Nat. of New South Wales. Mr. *David Burton.* ♄.

OXYLOBIUM.

Andrews's reposit. 492. *Brown mss.*

Cal. profundè 5-fidus, subbilabiatus. *Cor.* papilionacea, *carina* compressa longitudine *alarum* æquantium *vexillum* explanatum. *Stylus* adscendens. *Stigma* simplex. *Legumen* polyspermum, ventricosum, ovatum, acutum.

iii. 10] 1. O. *arborescens*, foliis lineari-lanceolatis, bracteis apicis pedicelli persistentibus, corymbis confertis, leguminibus calyce vix longioribus.

Nat. of Van Diemen's Island. *Robert Brown.* ♄.

2. O. *ellipticum*, foliis ovali-oblongis, bracteis infra apicem pedicelli caducis, corymbis confertis, leguminibus calyce duplo longioribus. *Brown mss.*

Gompholobium ellipticum. *Labillard. nov. holl.* 1, *p.* 107, *t.* 135.

Calistachys elliptica. *Venten. malmais.* 115, b. *Smith in linn. soc. transact.* 9, *p.* 266.

Nat. of Van Diemen's Island. Mr. *David Nelson.* ♄.

3. O. *cordifolium*, foliis ovatis cordatis pilosiusculis, umbellis terminalibus sessilibus. *Brown mss.*

Oxylobium cordifolium. *Andrews's reposit.* 492.

Nat. of New South Wales. The Right Hon. Sir *Joseph Banks*, Bart. K.B. ♄

BRACHYSEMA. *Brown mss.*

Cal. 5-fidus, parum inæqualis, tubo ventricoso. *Cor.* papilionacea, *vexillum* brevius *carina* compressa *alas* æquante. *Germen* pedicello basi vaginula cincto. *Stylus* filiformis, elongatus. *Legumen* polyspermum, ventricosum.

1. B. *latifolium*, foliis ovatis planis, vexillo oblongo-obovato. *Brown mss.*

Nat. of the South-west coast of New Holland. *Robert Brown.* ♄. [iii. 11

GOMPHOLOBIUM.

Smith in linn. soc. transact. 4, *p.* 220.

Cal. 5-partitus, subæqualis. *Cor.* papilionacea, *vexillo* explanato. *Stigma* simplex. *Legumen* polyspermum, subsphæricum, obtusissimum (glabrum).

1. C. *latifolium*, foliis ternatis: foliolis linearibus oblongo-linearibusve (uncialibus et ultra), caule erecto, carina fimbriata, calyce fructus reflexo. *Brown mss.*

Gompholobium latifolium. *Smith in linn. soc. transact.* 9, *p.* 249.

Gompholobium fimbriatum. *Smith exot. bot.* 1, *p.* 113, *t.* 58.

Gompholobium psoraliæfolium. *Salisb. parad.* 6.

Nat. of New South Wales. Colonel *William Paterson.* ♄.

2. G. *marginatum*, foliis ternatis: foliolis obovatis marginatis planis, stipulis petiolum æquantibus, corolla longitudine calycis. *Brown mss.*

Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

3. G. *polymorphum*, foliis ternatis quinatisve: foliolis linearibus margine recurvis: apice quandoque dilatato, caule procumbente v. volubili. *Brown mss.*

Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

iii. 12] 4. G. *tomentosum,* foliis pinnatis: foliolis subulato-linearibus mucronatis supra scabris, pedunculis subsolitariis, calycibus hirsutis legumine brevioribus, carina sericeo-ciliata. *Brown mss.*

Gompholobium tomentosum. *Labill. nov. holl.* 1, *p.* 106, *t.* 134.

Nat. of the South-west coast of New Holland. ♄.

5. G. *venustum,* foliis pinnatis multijugis: foliolis subulatis venosis margine revolutis calycibusque glabris, corymbo pedunculato multifloro, corollis purpureis. *Brown mss.*

Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

BURTONIA. *Brown mss.*

Cal. profunde 5-fidus. *Cor.* papilionacea, decidua, petalis longitudine subæqualibus. *Germen* dispermum. *Stylus* subulatus, basi dilatata. *Stigma* obtusum, imberbe. *Legumen* subrotundum, modice ventricosum. *Strophiola* seminis nulla.

1. B. *scabra,* foliis ternatis, calycibus glabris, stylo extra medium imberbi. *Brown mss.*

Gompholobium scabrum. *Smith in linn. soc. transact.* 9, *p.* 250.

Nat. of the South-west coast of New Holland. *Archibald Menzies,* Esq. ♄.

JACKSONIA. *Brown mss.*

Cal. 5-partitus, subæqualis. *Cor.* papilionacea, staminaque decidua. *Germen* dispermum. *Stylus* subulato-iii. 13] filiformis. *Stigma simplex.* *Legumen* modice ventricosum, ovatum v. oblongum, valvis intus pubescentibus. *Strophiola* seminis nulla.

1. J. *scoparia,* arborescens inermis, ramulis angulatis, racemis terminalibus. *Brown mss.*

Nat. of New South Wales. *Robert Brown.* ♄.

2. J. *spinosa,* fruticosa, ramulis spinescentibus di-trichotomis patulis angulatis, bracteis apicis pedicelli appressis brevissimis. *Brown mss.*

Gompholobium spinosum. *Labill. nov. holl.* 1, *p.* 107, *t.* 136.

Nat. of the South-west coast of New Holland. ♄.

VIMINARIA.

Smith in annals of bot. 1, *p.* 507. *Brown mss.*

Cal. 5-dentatus, angulatus. *Cor.* papilionacea. *Stylus* capillaris, *germine* dispermo aliquoties longior. *Stigma* simplex. *Legumen* evalve, ovatum. *Strophiola* seminis nulla.

1. V. *denudata, Smith exot. bot. t.* 27. *Linn. soc. transact.* 9, *p.* 261.

Daviesia denudata. *Venten. choix t.* 6.

Sophora juncea. *Schrad. sert. hanov. t.* 3.

Nat. of New Holland and Van Diemen's Island. ♄.

SPHÆROLOBIUM.

Smith in annals of bot. 1, *p.* 509. *Brown mss.*

Cal. 5-fidus, bilabiatus. *Cor.* papilionacea. *Stylus* [iii. 14 apice hinc membrana auctus, inde imberbis. *Stigma* terminale. *Legumen* sphæricum.

1. S. *vimineum,* calycis tubo labiis paulo breviore, stylo incluso a basi arcuato, corollis flavis. *Brown mss.*

Sphærolobium vimineum. *Smith in linn. soc. transact.* 9, *p.* 261. *Botan. magaz.* 969.

Sphærolobium minus. *Labillard. nov. holl.* 1, *p.* 108, *t.* 138.
Nat. of New Holland and Van Diemen's Island. ♄.

2. S. *medium,* calycis tubo labiis dimidio breviore, corollis rubris. *Brown mss.*
Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

AOTUS.

Smith in annals of bot. 1, *p.* 504. *Brown mss.*

Cal. 5-fidus, bilabiatus. *Cor.* papilionacea. *Stamina* decidua. *Germen* dispermum. *Stylus* filiformis. *Legumen* bivalve. *Strophiola* seminis nulla.

1. A. *villosa,* calycibus sericeis villis appressis, legumine pedicellato, seminibus punctato-rugosis, foliis supra scabris. *Brown. mss.*
Aotus villosa. *Smith in linn. soc. transact.* 9, *p.* 249. *Botan. mazag.* 949.
Aotus ferruginea. *Labillard. nov. holl.* 1, *p.* 104, *t.* 132.
Pultenæa ericoides. *Venten. malmais.* 35.
Nat. of New Holland and Van Diemen's Island. The Right Hon. Sir *Joseph Banks,* Bart. K.B. ♄

iii. 15]

DILLWYNIA.

Smith in annals of bot. 1, *p.* 310. *Brown mss.*

Cal. 5-fidus, bilabiatus, basi attenuata. *Cor.* papilionacea, petalis staminibusque deciduis, medio tubo calycis insertis: *vexilli* lamina duplo et ultra latior quam longa, divaricato-biloba. *Germen* dispermum. *Stylus* uncinatus. *Stigma* capitatum. *Legumen* ventricosum. *Semina* strophiolata.

1. D. *floribunda,* floribus axillaribus geminis, foliis subulatis mucronatis. *Brown mss.*

Dillwynia floribunda. *Smith exot. bot.* t. 26. *Linn. soc. transact.* 9, *p.* 262.

Nat. of New South Wales. ♄.

2. D. *ericifolia,* corymbis terminalibus sessilibus, foliis (4-lin.) subulatis punctato-scabris divaricatis subtortis: mucrone pungenti, ramulis pubescentibus. *Brown mss.*

Dillwynia ericifolia. *Smith exot. bot. t.* 25. *Linn. soc. transact.* 9, *p.* 262.

Pultenæa retorta. *Wendl. hort. herrenhus.* 2, *p.* 13, *t.* 9.

Nat. of New South Wales. ♄.

3. D. *glaberrima,* corymbis terminalibus pedunculatis, foliis filiformibus erectis lævibus: mucrone innocuo recurvo. *Brown mss.*

Dillwynia glaberrima. *Smith in linn. soc. transact.* 9, *p.* 263. *Botan. magaz.* 944.

Nat. of New South Wales. The Right Hon. Sir *Joseph Banks,* Bart. K. B. ♄

EUTAXIA. *Brown mss.* [iii. 16

Cal. bilabiatus. *Cor.* papilionacea, *vexilli* lamina paulo latior quam longa. *Germen* dispermum. *Stylus* uncinatus. *Stigma* capitatum. *Legumen* modice ventricosum. *Semina* strophiolata. *Folia* opposita.

1. E. *myrtifolia,* foliis lanceolatis lanceolato-obovatisve, pedunculis axillaribus geminis, alarum appendicibus brevissimis. *Brown mss.*

Dillwynia myrtifolia. *Smith in linn. soc. transact.* 9, *p.* 263.

Dillwynia obovata. *Labillard. nov. holl.* 1, *p.* 110, *t.* 140. *Botan. magaz.* 1274.

Nat. of the South-west coast of New Holland. ♄.

SCLEROTHAMNUS. *Brown mss.*

Cal. 5-fidus, bilabiatus, basi bibracteatus. *Cor.* papilionacea: *carina* longitudine alarum. *Germen* dispermum, pedicellatum. *Stylus* adscendens, filiformis. *Stigma* simplex. *Legumen* ventricosum.

1. S. *microphyllus, Brown mss.*
Nat. of the South coast of New Holland. *Robert Brown.* ♄.

GASTROLOBIUM. *Brown mss.*

Cal. 5-fidus, bilabiatus, ebracteatus. *Cor.* papilionacea, petalis longitudine subæqualibus. *Germen* dispermum, pedicellatum. *Stylus* subulatus, adscendens. *Stigma* simplex. *Legumen* ventricosum. *Semina* strophiolata.

1. G. *bilobum,* foliis (uncialibus) subtus subsericeis retusis: lobulis rotundatis mucronulo longioribus, leguminis iii. 17] pedicello tubum calycis æquante. *Brown mss.*
Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

EUCHILUS. *Brown mss.*

Cal. profunde 5-fidus, bilabiatus, labio superiore maximo; basi bibracteatus. *Cor.* papilionacea, *carina* longitudine alarum. *Germen* dispermum, pedicellatum. *Stylus* subulatus, adscendens. *Stigma* simplex. *Legumen* compressum. *Strophiola* seminis lobis posticis integris.

1. E. *obcordatus, Brown mss.*
Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

PULTENÆA.

Smith in annals of bot. 1, *p.* 502. *Brown mss.*

Cal. 5-fidus, labiis proportionatis, bibracteatus (bracteis sæpius ipso tubo insidentibus). *Cor.* papilionacea. *Germen* sessile, dispermum. *Stylus* subulatus, adscendens. *Stigma* simplex. *Strophiola* seminis lobis posticis incisis.

1. P. *daphnoides*, capitulis terminalibus, foliis obovato-oblongis planis glaberrimis lævibus (uncialibus) triplo longioribus quam latis: mucrone pungenti. *Brown mss.*

Pultenæa daphnoides. *Smith in linn. soc. transact.* 9, *p.* 247. *Willden. sp. pl.* 2, *p.* 507. *Andrews's reposit.* 98. *Wendl. hort. herrenhus.* 3, *p.* 7, *t.* 17.

Nat. of New South Wales. The Right Hon. Sir *Joseph Banks*, Bart. K. B. ♄

2. P. *obcordata*, capitulis terminalibus, foliis cuneato- [iii. 18 obcordatis retusis planis glaberrimis lævibus (semuncialibus) vix duplo longioribus quam latis: mucrone pungenti. *Brown mss.*

Pultenæa obcordata. *Andrews's reposit.* 574.

Nat. of Van Diemen's Island. *Robert Brown.* ♄.

3. P. *scabra*, capitulis terminalibus paucifloris, foliis cuneiformibus truncatis setaceo-mucronatis margine recurvis: supra scabris; subtus villosis, stipulis setaceis recurvis. *Brown mss.*

Nat. of New South Wales. *Robert Brown.* ♄.

4. P. *retusa*, capitulis terminalibus, foliis linearibus retusis muticis planis glabris, bracteis calyce paulo longioribus. *Brown mss.*

Pultenæa retusa. *Smith in linn. soc. transact.* 9, *p.* 247.

Nat. of New South Wales. ♄.

5. P. *linophylla*, bracteis capitulo 6—8-floro brevioribus foliis linearibus (semuncialibus) mucronulo marginibusque

recurvis: subtus sericeis, stipulis petiolo brevioribus. *Brown mss.*

Pultenæa linophylla. *Smith in linn. soc. transact.* 9, *p.* 247. *Schrad. sert. hannov.* 3, *p.* 28, *t.* 18. *Willden. sp. pl.* 2, *p.* 505.

iii. 19] *Nat.* of New South Wales. The Right Hon. Sir *Joseph Banks*, Bart. K. B. ♄.

6. P. *stipularis*, capitulis multifloris: bracteis calyces subæquantibus, foliis planis linearibus acutis: junioribus ciliatis, stipulis bifidis planis imbricatis. *Brown mss.*

Pultenæa stipularis. *Smith in linn. soc. transact.* 9, *p.* 245. *Smith nov. holl.* 1, *p.* 35, *t.* 12. *Botan. magaz.* 435. *Willden. sp. pl.* 2, *p.* 506.

Nat. of New South Wales. ♄.

7. P. *vestita*, floribus axillaribus, foliis lineari-lanceolatis mucronatis glabris: marginibus inflexis, stipulis imbricatis ciliatis, calycibus bracteisque aristatis. *Brown mss.*

Nat. of the South coast of New Holland. *Robert Brown.* ♄.

8. P. *villosa*, racemis foliatis, foliis lineari-oblongis: supra concaviusculis; subtus et calycibus ramulisque pilosis. *Brown mss.*

Pultenæa villosa. *Willden. sp. pl.* 2, *p.* 507. *Smith in linn. soc. transact.* 9, *p.* 248. *Botan. magaz.* 967.

Nat. of New South Wales. ♄.

9. P. *flexilis*, glaberrima, floribus axillaribus, foliis oblongo-linearibus mucronatis planis. *Brown mss.*

Pultenæa flexilis. *Smith in linn. soc. transact.* 9, *p.* 248.

iii. 20] *Nat.* of New South Wales. Colonel *William Paterson.* ♄.

DAVIESIA.

Smith in linn. soc. transact. 4, *p.* 222. *Brown mss.*

Cal. angulatus, ebracteatus. *Cor.* papilionacea, *carina* vexillo brevior. *Germen* pedicellatum, dispermum. *Stylus* strictus. *Stigma* simplex. *Legumen* compressum, angulatum, elastice dehiscens. *Strophiola* seminis postice integra.

1. D. *ulicina,* ramis spinescentibus glabris patulis, foliis lanceolatis linearibusve margine lævibus: mucrone spinoso, pedunculis axillaribus unifloris: bracteis (8) imbricatis. *Brown mss.*
Daviesia ulicina. *Smith in linn. soc. transact.* 9, *p.* 256.
Daviesia ulicifolia. *Andrews's reposit.* 304.
Nat. of New South Wales. ♄.

2. D. *mimosoides,* ramis inermibus, foliis elongato-lanceolatis: mucrone brevissimo innocuo, corymbis axillaribus geminis solitariisve: bracteis adpressis, calycis labio superiore retuso. *Brown mss.*
Daviesia corymbosa. *Andrews's reposit.* 526. (excluso synonymo.)
Nat. of New South Wales. *Robert Brown.* ♄.

3. D. *latifolia,* ramis inermibus, foliis ellipticis ovalibusve venosis basi subattenuatis, racemis axillaribus multifloris. *Brown mss.*
Nat. of Van Diemen's Island. *Robert Brown.* ♄. [iii. 21

MIRBELIA.

Smith in annals of bot. 1, *p.* 541. *Brown mss.*

Cal. 5-fidus, bilabiatus. *Cor.* papilionacea. *Legumen* biloculare, sutura utraque inflexa.

1. M. *reticulata,* foliis lanceolato-linearibus venosis, germinibus dispermis. *Brown mss.*

Mirbelia reticulata. *Smith in linn. soc. transact.* 9, *p.* 265. *Venten. malmais.* 119.

Pultenæa rubiæfolia. *Andrews's reposit.* 351.

Nat. of New South Wales. Mr. *David Burton.* ♄.

2. M. *dilatata,* foliis cuneiformibus: apice dilatato trifido. *Brown mss.*

Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

CERCIS. *Gen. pl.* 696. *Brown mss.*

Cal. 5-dentatus. *Corolla* papilionacea. *Legumen* compressum, sutura seminifera alata. *Semina* obovata, embryone recto.

1. C. *Siliquastrum,* foliis orbiculatis cordatis. *Willden. sp. pl.* 2, *p.* 507. *Botan. magaz.* 1138. *Schmidt arb.* 1, *p.* 21, *t.* 20.

Nat. of the South of Europe and the Levant. ♄.

iii. 22] 2. C. *canadensis,* foliis cordatis acuminatis. *Willden. sp. pl.* 2, *p.* 508. *Schmidt arb.* 1, *p.* 22, *t.* 21.

Nat. of North America. ♄

DIADELPHIA DECANDRIA.

iv, 266] PLATYLOBIUM. (*Smith in linn. soc. transact.* 9, *p.* 302.) *Brown mss.*

Cal. bracteatus, bilabiatus: labio superiore bifido rotundato maximo. *Stam.* omnia connexa. *Legumen* pedicellatum, compresso-planum, dorso alatum, polyspermum.

1. P. *formosum,* foliis ovatis subcordatis, germine undique villoso, bracteis sericeis, pedicello leguminis calyce breviore. *Brown mss.*

Platylobium formosum. *Willden. sp. pl.* 3, *p.* 921.

Smith new holl. 17, *t.* 6. *Botan. magaz.* 469. *Venten. malmais.* 31.
Nat. of New South Wales. ♄.

2. P. *parviflorum*, foliis lanceolato-ovatis, germine ciliato glabriusculo, bracteis glabris, pedicello leguminis calycem superante. *Brown mss.*
Platylobium parviflorum. *Willden. sp. pl.* 3, *p.* 921.
Nat. of New South Wales. ♄.

3. P. *triangulare*, foliis deltoideis subhastatisve: angulis spinosis, pedunculis basi apiceque bracteatis medio nudis, legumine calycem aliquoties superante. *Brown mss.*
Nat. of Van Diemen's Island. *Robert Brown.* ♄.

BOSSIÆA. (*Venten. cels.* 7.) *Brown mss.*

Cal. bilabiatus: labio superiore majore semibifido obtuso. *Stam.* omnia connexa. *Legumen* plano- [iv. 267 compressum, pedicellatum, polyspermum, margine utroque incrassatum. *Semina* strophiolata.

1. B. *Scolopendrium*, ramis complanatis linearibus aphyllis: denticulis floriferis, caule erecto, carina nuda, bracteis superioribus persistentibus imbricatis pedunculum æquantibus, calyce glaberrimo. *Brown mss.*
Bossiæa scolopendria. *Smith in linn. soc. transact.* 9, p. 303.
Platylobium scolopendrum. *Andrews's reposit.* 191.
Platylobium scolopendrium. *Venten. malmais.* 55.
Nat. of New South Wales. ♄.

2. B. *rufa*, ramis complanatis linearibus aphyllis: denticulis floriferis, carina fimbriata, bracteis superioribus caducis ab inferioribus remotis, calycibus glaberrimis. *Brown mss.*
Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

3. B. *heterophylla*, ramis foliosis compressis, foliis obo-

vatis linearibusque planis, legumine multiloculari: septis spongiosis. *Brown mss.*

Bossiæa heterophylla. *Smith in linn. soc. transact.* 9, *p.* 302. *Willden. sp. pl.* 3, *p.* 972. *Venten. cels.* 7.
Bossiæa lanceolata. *Botan. magaz.* 1144.
Platylobium lanceolatun. *Andrews's reposit.* 205.
Platylobium ovatum. *Andrews's reposit.* 276.
Nat. of New South Wales. ♄.

iv. 268] 4. B. *linophylla,* ramis foliosis compressis, foliis linearibus: marginibus recurvis, legumine uniloculari. *Brown mss.*

Nat. of the south-west coast of New Holland. *Robert Brown.* ♄.

5. B. *prostrata,* ramis foliosis filiformibus, caule procumbente, foliis ovalibus glabris, stipulis petiolo brevioribus, legumine uniloculari. *Brown mss.*

Nat. of New South Wales. *Robert Brown.* ♄.

6. B. *cinerea,* ramis foliosis teretibus, caule erecto ramosissimo, foliis ovato-lanceolatis: supra scabris; subtus pubescentibus; marginibus recurvis. *Brown mss.*

Nat. of Van Diemen's Island. *Robert Brown.* ♄.

7. B. *microphylla,* ramis foliosis spinescentibus teretibus, foliis obcordato-cuneiformibus. *Brown mss.*

Bossiæa microphylla. *Smith in linn. soc. transact.* 9, *p.* 303.
Platylobium microphyllum. *Sims in botan. magaz.* 863.
Nat. of New South Wales. Mr. *George Caley.* ♄.

SCOTTIA. *Brown mss.*

Cal. bracteis imbricatus, 5-dentatus dentibus parum ii. 269] inæqualibus. *Vexillum* complicatum brevius Alis æquantibus Carinam. *Stam.* omnia connexa. *Legumen* pedicellatum, compressum; margine utroque incrassato. *Semina* (3-4) strophiolata.

1. Scottia *dentata*. *Brown mss.*
Nat. of the south-west coast of New Holland. *Robert Brown.* ♄.

TEMPLETONIA. *Brown mss.*

Cal. ebracteatus, 5-dentatus, dentibus parum inæqualibus. *Carina* oblonga. *Stam.* omnia connexa, antheris uniformibus. *Legumen* pedicellatum, plano-compressum, polyspermum. *Semina* strophiolata.

1. Templetonia *retusa*. *Brown mss.*
Rafnia retusa. *Venten. malmais.* 53.
Nat. of the south-west coast of New Holland. *Robert Brown.* ♄

GOODIA. (*Salisb. paradis.* 41.) *Brown mss.*

Cal. bilabiatus labiis longitudine subæqualibus; superiore semibifido acuto. *Vexillum* explanatum majus. *Stam.* omnia connexa. *Legumen* pedicellatum, compressum, subdispermum. *Semina* strophiolata.

1. G. *lotifolia*, foliolis obovatis calycibusque glaberrimis, legumine varicoso. *Brown mss.*
Goodia lotifolia. *Salisb. paradis.* 41. *Botan. magaz.* 958.
Nat. of Van Diemen's Island. Mr. *David Nelson.* ♄.

2. G. *pubescens*, foliolis obovato-cuneatis calycibusque pubescentibus, legumine lævi. *Brown mss.* [v. 270
Goodia pubescens. *Sims. in botan. magaz.* 1310.
Nat. of Van Diemen's Island. *Robert Brown.* ♄.

HOVEA. *Brown mss.* [iv. 275

Cal. bilabiatus: labio superiore semibifido retuso. *Stam.* omnia connexa. *Carina* obtusa. *Legumen* sessile subrotundum ventricosum dispermum. *Semina* strophiolata.

1. H. *linearis,* foliis linearibus subtus pilosiusculis, leguminibus glabris. *Brown mss.*
Poiretia linearis. *Smith in linn. soc. transact.* 9, *p.* 304.
Nat. of New South Wales. ♄.

2. H. *longifolia,* foliis elongato-linearibus: subtus venosis leguminibusque tomentosis. *Brown mss.*
Nat. of New South Wales. *Robert Brown.* ♄.

iv. 299] KENNEDIA. *Venten. malmais.* 104.

Vexillum recurvum a carina non reflexum. *Legumen* multiloculare, polyspermum. *Semina* strophiolata.

1. K. *rubicunda,* foliis ternatis: foliolis ovatis, pedunculis subtrifloris, leguminibus hirsutissimis. *Venten. malmais.* 104.
Glycine rubicunda. *Willden. sp. pl.* 3, *p.* 1065. *Curtis magaz.* 268. *Schneevoogt ic.* 28.
Nat. of New South Wales. The Right Hon. Sir *Joseph Banks,* Bart. K. B. ♄.

2. K. *coccinea,* foliis ternatis: foliolis obovatis, floribus capitatis, leguminibus glabriusculis. *Venten. malmais.* 105, excluso synonymo Curtisii.
Nat. of the South-West Coast of New Holland. *Robert Brown.* ♄.

3. K. *prostrata,* foliis ternatis: foliolis obovatis villosis, pedunculis 1-2-floris, carina alas oblongas superante, caule prostrato. *Brown mss.*
Glycine coccinea. *Willden. sp. pl.* 3, *p.* 1065. *Curtis magaz.* 270. ♄.

4. K. *monophylla,* foliis simplicibus glabris reticulatis: basi subcordata, floribus racemosis. *Brown mss.*
iv. 300] Kennedia monophylla. *Venten. malmais.* 106.
Glycine bimaculata. *Willden. sp. pl.* 3, *p.* 1067. *Curtis magaz.* 263. *Schneevoogt ic.* 29.

Nat. of New South Wales. The Right Hon. Sir *Joseph Banks*, Bart. K. B. ♄.

COLUTEA. (*Gen. pl.* 1196.) *Brown mss.* [iv. 325

Cal. 5-dentatus. *Vexillum* bicallosum, explanatum, majus Carina obtusa. *Stigma* laterale sub apice uncinato [iv. 326 Styli postice longitudinaliter barbati. *Legumen* inflatum scariosum.

1. C. *arborescens*, foliolis ellipticis retusis, vexilli gibbis abbreviatis, caule fruticoso. *Willden. sp. pl.* 3, *p.* 1139. *Curtis magaz.* 81. *Schmidt arb. t.* 117.
Nat. of France and Italy. ♄.

2. C. *cruenta*, foliolis obovatis emarginatis glaucis, vexilli gibbis obtusis minimis, leguminibus apice apertis, caule fruticoso. *Willden. sp. pl.* 3, *p.* 1139.
Colutea aperta. *Schmidt arb. t.* 119.
Nat. of the Levant. ♄.

3. C. *Pocockii*, foliolis subrotundo-ellipticis obtusissimis mucronatis, vexilli gibbis elongatis adscendentibus, caule fruticoso. *Willden. sp. pl.* 3, *p.* 1140. *Schmidt arb. t.* 120.
Nat. of the Levant. ♄.

SWAINSONA. (*Salisb. parad.* 28.) *Brown mss.*
Loxidium. *Venten dec. gen. nov.*

Cal. 5-dentatus. *Vexillum* explanatum majus Carina obtusa. *Stigma* terminale. *Stylus* postice longitudinaliter barbatus; antice imberbis. *Legumen* turgidum (non vesicarium).

1. S. *galegifolia*, vexillo bicalloso, caule suffruticoso [iv. 327 erecto, pedicello leguminis filamentis persistentibus longiore. *Brown mss.*

Colutea galegifolia. *Sims in botan. magaz.* 792.
Vicia galegifolia. *Andrews's reposit.* 319.
Nat. of New South Wales. Colonel *William Paterson.* ♄.

2. S. *coronillifolia,* vexillo bicalloso, caule suffruticoso erecto, pedicello leguminis filamentis persistentibus (parum) breviore. *Brown mss.*
Swainsona coronillæfolia. *Salisb. paradis.* 28.
Nat. of New South Wales. Colonel *William Paterson.* ♄.

SUTHERLANDIA. *Brown mss.*

Cal. 5-dentatus. *Vexillum* ecallosum, lateribus replicatis, brevius Carina oblonga. *Stigma* terminale. *Stylus* postice barba longitudinali; antice transversa apicis. *Legumen* inflatum scariosum.

1. Sutherlandia *frutescens.*
Colutea frutescens. *Willden. sp. pl.* 3, *p.* 1140. *Curtis magaz.* 181.
Nat. of the Cape of Good Hope. ♄.

LESSERTIA. (*Decand. astrag.*) *Brown mss.*

Cal. semi-5-fidus. *Vexillum* explanatum. *Carina* obtusa. iv. 328] *Stigma* capitatum. *Stylus* antice barba transversa apicis; postice imberbis. *Legumen* scariosum, evalve (compressum v. inflatum).

1. L. *annua,* calycibus bibracteatis nigro-pilosis foliolis linearibus supra glabris. *Brown mss.*
Lessertia annua. *Decand. astrag.* 38.
Colutea herbacea. *Willden. sp. pl.* 3, *p.* 1141.
Colutea africana annua foliolis parvis mucronatis, vesiculis compressis. *Commel. hort.* 2, *p.* 87, *t.* 44.
Nat. of the Cape of Good Hope. ⊙.

2. L. *diffusa*, foliolis linearibus emarginatis utrinque cauleque diffuso hirsutis, calycibus ebracteatis nigro-pilosis. *Brown mss.*
Galega dubia. *Jacqu. ic.* 3, *t.* 576.
Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ⊙.

3. L. *perennans*, calycibus ebracteatis, foliolis ovalibus: subtus sericeis; supra pubescentibus. *Brown mss.*
Lessertia perennans. *Decand. astrag.* 37.
Colutea perennans. *Willden. sp. pl.* 3, *p.* 1142. *Jacqu. hort. vindob.* 3, *p.* 5, *t.* 3. *Murray in nov. comm. gotting.* 5, *p.* 38, *t.* 7, *f.* 1.
Nat. of the Cape of Good Hope. ♃.

SESBANA. [iv. 330

Brown mss. Sesban. *Poiret. in encycl.* 7, *p.* 126.

Cal. 5-dentatus. *Legumen* elongatum (teres v. lineare), bivalve, septis transversis multiloculare.

1. S. *grandiflora*, racemis subtrifloris, foliolis oblongis emarginatis, calycis labiis distantibus; dentibus cohærentibus, caule arboreo.
Coronilla grandiflora. *Willden. sp. pl.* 3, *p.* 1145.
Agaty. *Rheed. mal.* 1, *p.* 95, *t.* 51.
Nat. of the East Indies. ♄.

2. S. *ægyptiaca*, racemis multifloris, foliolis lineari-oblongis obtusis mucronulatis, rachi foliorum lævi.
Sesban ægyptiacus. *Poiret in encycl.* 7, *p.* 128.
Coronilla Sesban. *Willden. sp. pl.* 3, p. 1147.
Sesban. *Alpin. ægypt.* 81, *t.* 82.
Nat. of Egypt. ♂.

3. S. *aculeata*, racemis paucifloris, foliolis linearibus obtusis mucronulatis, rachi foliorum aculeata.
Coronilla aculeata. *Willden. sp. pl.* 3, *p.* 1147.

Æschynomene bispinosa. *Jacqu. ic.* 3, *t.* 564.
Nat. of the East Indies. ⊙.

iv. 336] SMITHIA. (*Gen. pl.* 1760). *Brown mss.*

Stamina divisa in duas phalanges æquales. *Legumen* articulatum, plicatum, inclusum Calyce bifido.

1. S. *sensitiva.* *Willden. sp. pl.* 3, *p.* 1161. *Salisb. paradis.* 92.
Nat. of the East Endies. *John Gerard Kœnig,* M.D. ♂.

ÆSCHYNOMENE. (*Gen. pl. ed.* 1, *p.* 350. *Palis. fl. d'Oware* 1, *p.* 88.) *Brown mss.*

Stamina divisa in duas phalanges æquales. *Legumen* articulatum strictum exsertum. *Calyx* bipartitus, labiis dentatis.

1. Æ. *sensitiva,* caule fruticoso lævi, foliolis linearibus obtusis, racemis paucifloris, lomentis lævibus. *Willden. sp. pl.* 3, *p.* 1162.
Hedysarum arborescens, foliis mimosæ. *Plum. ic.* 140, *t.* 149.
Nat. of the West Indies. ♄.

iv. 337] 2. Æ. *aspera,* caule herbaceo inferne scabro, foliolis linearibus obtusis, racemis compositis hispidis, lomenti articulis medio scabris. *Willden. sp. pl.* 3, *p.* 1163.
Mimosa non spinosa major zeylanica. *Breyn. cent.* 51, *t.* 52.
Nat. of the East Indies. ⊙.

3. Æ. *hispida,* caule herbaceo hispido, foliolis linearibus obtusis, racemis simplicibus, lomentis hispidis. *Willden. sp. pl.* 3, *p.* 1163.
Nat. of North America. ⊙.

4. Æ. *americana,* caule herbaceo hispido, foliolis lineari-falcatis acuminatis, racemis simplicibus, lomenti articulis

subrotundis distinctis glabris. *Willden. sp. pl.* 3, *p.* 1163.

Æschynomene caule hispido, foliolis acuminatis, leguminum articulis suborbiculatis. *Hebenstreit in nov. comm. petropol.* 8, *p.* 321, *tab.* 12.

Nat. of Jamaica. ⊙.

5. Æ. *indica,* caule herbaceo lævi, leguminibus lævibus hinc torosis obtusis, foliolis obtusis. *Willden. sp. pl.* 3, *p.* 1164.

Neli Tali. *Rheed mal.* 9, *p.* 31, *t.* 18.

Nat. of the East Indies. ⊙. [iv. 338

POLYGAMIA MONŒCIA.

ACACIA. [v. 460

3. A. *acicularis,* foliis tereti-subulatis mucronatis sparsis rigidis, stipulis deciduis, ramulis glabris, spicis globosis slitariis. *Brown mss.*

Nat. of New South Wales. Colonel *William Paterson.* ♄.

4. A. *sulcata,* foliis filiformibus undique sulcatis: mucronulo innocuo, capitulis subgeminis; bracteis basis pedunculi ovatis concavis persistentibus, leguminibus flexuosis. *Brown mss.*

Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

12. A. *melanoxylon,* foliis lanceolato-oblongis nervosis subfalcatis, capitulis subracemosis, ramulis ultimis pedunculisque angulatis: furfure tenuissimo tectis, funiculo umbilicali colorato plicato semen subcingente. *Brown mss.* [v. 462

Nat. of Van Diemen's Island. *Robert Brown.* ♄.

13. A. *Sophoræ,* foliis oblongis æquilateris nervosis, spicis geminis sessilibus, corollis tetrapetalis, leguminibus torosis, funiculo umbilicali plicato. *Brown mss.*

Mimosa Sophoræ. *Labillard. nov. holl.* 2, *p.* 87, t. 237.
Nat. of Van Diemen's Island. ♄.

14. A. *marginata*, foliis elongato-lanceolatis subfalcatis marginatis uninerviis: margine antico parum exciso uniglanduloso, capitulis racemosis sub-4-floris. *Brown mss.*
Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

v. 463] 17. A. *decipiens*, foliis triangularibus passimque trapezoideis: angulo exteriore spinoso; interiore glandulifero, stipulis setaceis caducis, ramulis glabris, capitulis solitariis 7—10-floris. *Brown mss.*
Mimosa decipiens. *König in annals of bot.* 1, *p.* 366, *t.* 8.
Adiantum truncatum. *Linn. syst. veg. ed.* 13, *p.* 790.
Nat. of the South-west coast of New Holland. *Archibald Menzies*, Esq. ♄.

18. A. *biflora*, foliis triangularibus: angulo exteriore spinoso; interiore glandulifero, stipulis setaceo-spinosis persistentibus, ramulis pubescentibus, capitulis bifloris. *Brown mss.*
Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

19. A. *armata*, foliis dimidiato-oblongis glabris mucronulatis uninerviis: nervo parallele approximato margini v. 464] interiori subtruncato, stipulis spinosis, capitulis globosis solitariis, ramis hirsutis. *Brown mss.*
Nat. of the South coast of New Holland. *Robert Brown.* ♄.

20. A. *alata*, caule bifariam alato, foliis decurrentibus uninerviis spinula terminatis: margine interiore dente unico glandulifero, stipulis spinosis, capitulis pedunculatis subsolitariis. *Brown mss.*
Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

22. A. *pulchella*, foliis conjugato-pinnatis: glandula

pedicellata inter pinnas 5—7-jugas, stipulis spinosis folia subæquantibus, capitulis solitariis, ramis flexuosis. *Brown mss.*

Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

23. A. *ciliata,* inermis pilosa, foliis bipinnatis: partialibus [v. 465
bijugis: propriis 2—3-jugis, stipulis subsetaceis caducis, capitulis solitariis. *Brown mss.*

Nat. of the South-west coast of New Holland. *Robert Brown.* ♄.

24. A. *nigricans,* inermis glabra, foliis bipinnatis: partialibus bijugis: superioris propriis 5—7-jugis; inferioris 2—3-jugis, stipulis subulato-setaceis, capitulis solitariis. *Brown mss.*

Mimosa nigricans. *Labillard. nov. holl.* 2, *p.* 88, *t.* 238.

Nat. of the South-west coast of New Holland. ♄.

33. A. *pubescens,* inermis, foliis bipinnatis: partialibus suboctojugis; propriis subquindecimjugis, racemis axillaribus solitariis: capitulis globosis pedicellatis, ramis hirsutis, petiolis eglandulosis.

Mimosa pubescens. *Venten. malmais.* 21. *Botan. magaz.* 1263.

Nat. of New South Wales. [v. 468

GENERA ET SPECIES QUÆDAM

PLANTARUM MYRTACEARUM,

QUÆ

IN HORTO KEWENSI COLUNTUR.

[*Extracted from 'Hortus Kewensis,' 2nd Edition, Vol. IV, pp.* 410—419.]

LONDON.
1812.

POLYADELPHIA ICOSANDRIA. [410

MELALEUCA. (*Smith in linn. soc. transact.* 3, *p.* 273.) *Brown mss.*

Staminum phalanges 5, petalis oppositæ, elongatæ: *Antheræ* incumbentes. *Caps.* 3-loc. polysperma, connata et inclusa calycis tubo incrassato basi adnato (ramo).

Folia alterna.

1. M. *Leucadendron,* foliis elongato-lanceolatis acuminatis falcatis aversis 3—5-nervibus, ramulis floriferis pendulis spicisque glaberrimis. *Brown mss.*
Melaleuca Leucadendron. *Willden. sp. pl.* 3, *p.* 1428.
Arbor alba Caju Puti. *Rumph. amb.* 2, *p.* 72, *t.* 16.
Nat. of the East Indies. ♄.

2. M. *viridiflora,* foliis elliptico-lanceolatis æquilateris 5-nervibus, ramulis et rachi spicæ calycisque tubo pubescentibus, phalangium unguibus calycis laciniis brevioribus obsoletisve. *Brown mss.*
Melaleuca viridiflora. *Willden. sp. pl.* 3, *p.* 1429.
Metrosideros quinquenervia. *Cavanill. ic.* 4, *p.* 19, *t.* 333.
Nat. of New South Wales. *John White,* M.D. ♄.

3. M. *paludosa,* foliis lineari-lanceolatis elongatis æquila-
teris strictis 3-nervibus: nervis lateralibus margini sca- [411
bro approximatis, rachi spicæ cylindricæ calycisque tubo
sericeis, phalangium unguibus brevissimis. *Brown mss.*

Nat. of the South-west Coast of New Holland. *Robert Brown.* ♄.

4. M. *globifera*, foliis oblongis 5-nervibus æquilateris basi attenuatis, capitulis sphæricis, capsulis connatis. *Brown mss.*

Nat. of the South Coast of New Holland. *Robert Brown.* ♄.

5. M. *diosmifolia*, foliis ovalibus oblongisve obsolete uninervibus petiolatis planis confertis ramulisque glaberrimis, spicis oblongis glabris, phalangibus 3—5-andris. *Brown mss.*

Melaleuca diosmæfolia. *Andrews's reposit.* 476.

Nat. of the South-west Coast of New Holland. *Archibald Menzies, Esq.* ♄.

6. M. *stypheloides*, foliis ovatis acuminatis mucronato-pungentibus striato-multinervibus sessilibus glabris, spicis pubescentibus, calycis laciniis acutis nervosis. *Brown mss.*

Melaleuca stypheloides. *Willden. sp. pl.* 3, *p.* 1430.

Nat. of New South Wales. Mr. *David Burton.* ♄.

7. M. *genistifolia*, foliis lineari-lanceolatis obsolete 1—3-
412] nervibus, spicis laxis foliatis glabris, phalangibus poly-
andris: unguibus petala subæquantibus. *Brown mss.*

Melaleuca genistifolia. *Willden. sp. pl.* 3, *p.* 1431. *Smith exot. bot.* 1, *p.* 107, *t.* 55.

Nat. of New South Wales. Mr. *David Burton.* ♄.

8. M. *striata*, foliis lanceolato-linearibus acutis punctatis obsolete striatis rigidis subsessilibus, spicis ovalibus oblongisve, calycis tubo lanato, phalangibus subdecandris: unguibus petala bis superantibus. *Brown mss.*

Melaleuca striata. *Labillard. nov. holl.* 2, *p.* 26, *t.* 165.

Nat. of the South Coast of New Holland. *Robert Brown.* ♄.

9. M. *thymoides*, foliis lanceolatis (passim oblongis) tri-

nervibus petiolatis ramulisque glaberrimis, capitulis globosis ovalibusve, calycis laciniis acutis trinervibus, phalangibus subdecandris: unguibus petalis brevioribus. *Brown mss.*

Melaleuca thymoides. *Labillard. nov. holl.* 2, *p.* 27, *t.* 167.

Nat. of the South-west Coast of New Holland. *Robert Brown.* ♄.

10. M. *squamea,* foliis ovatis lanceolatis acuminatis trinervibus: novellis ramulisque villosis, capitulis globosis pubescentibus, phalangibus 5—6-andris: unguibus brevissimis. *Brown mss.*

Malaleuca squamea. *Labillard. nov. holl.* 2, *p.* 28, *t.* 168.

Nat. of Van Diemen's Island. ♄. [413

11. M. *nodosa,* foliis subulato-linearibus mucronatis rigidis uninervibus planis, capitulis globosis, calycis laciniis membranaceis glabris, phalangibus 3—6-andris: unguibus petalis brevioribus. *Brown mss.*

Malaleuca nodosa. *Willden. sp. pl.* 3, *p.* 1431. *Smith exot. bot.* 1, *p.* 67, *t.* 35. *Venten. malmais.* 112.

Nat. of New South Wales. The Right Hon. Sir *Joseph Banks,* Bart. K.B. ♄

12. M. *ericifolia,* foliis lineari-subulatis enervibus muticis patentibus subrecurvisque, spicis ovalibus glabris, phalangibus 8—10-andris: unguibus petala vix æquantibus. *Brown mss.*

Malaleuca ericifolia. *Willden. sp. pl.* 3, *p.* 1430. *Smith exot. bot.* 1, *p.* 65, *t.* 34.

Nat. of New South Wales. *John White,* M.D. ♄.

13. M. *armillaris,* foliis lineari-subulatis mucronatis apice recurvis, spicis cylindricis glaberrimis, phalangibus polyandris: unguibus petala superantibus. *Brown mss.*

Melaleuca armillaris. *Wilden. sp. pl.* 3, *p.* 1431.

Melaleuca ericæfolia. *Andrews's reposit.* 175. *Venten. malmais.* 76.

Nat. of New South Wales. The Right Hon. Sir *Joseph Banks,* Bart. K.B. ♄.

14. M. *uncinata,* foliis angulato filiformibus mucronatis [414 erectis: apice uncinato recurvo, ramulis virgatis, capitulis ovalibus: rachi lanata, phalangibus 5—6-andris: unguibus petala superantibus. *Brown mss.*

Nat. of the South Coast of New Holland. *Robert Brown.* ♄

15. M. *scabra,* foliis teretiusculis mucronulatis scabris confertis, capitulis globosis, phalangibus 4—6-andris: unguibus petala subæquantibus. *Brown mss.*

Nat. of the South Coast of New Holland. *Robert Brown.* ♄

16. M. *pulchella,* foliis sparsis suboppositisque ovalibus obtusis obsolete 3-nervibus floribusque subsolitariis glabris, phalangibus polyandris intus basin usque ramosis. *Brown mss.*

Nat. of the South Coast of New Holland. *Robert Brown.* ♄.

Folia opposita v. verticillata.

17. M. *thymifolia,* foliis oppositis lanceolatis enervibus, spicis paucifloris, phalangibus polyandris: unguibus intus medium usque ramosis. *Brown mss.*

Melaleuca thymifolia. *Willden. sp. pl.* 3, *p.* 1432. *Smith exot. bot.* 1, *p.* 69, *t.* 36.

Melaleuca gnidiæfolia. *Venten. malmais.* 7.

Melaleuca coronata. *Andrews's reposit.* 278.

415] *Nat.* of New South Wales. The Right Hon. Sir *Joseph Banks,* Bart. K.B. ♄.

18. M. *decussata,* foliis oppositis decussatis ovali-lanceolatis trinervibus, spicis ovalibus glaberrimis, phalangibus polyandris: unguibus brevissimis. *Brown mss.*

Nat. of the South Coast of New Holland. *Robert Brown.* ♄.

19. M. *fulgens,* foliis oppositis lanceolato-linearibus acutis uninervibus, spicis ovalibus glaberrimis, phalangibus multifidis: unguibus longitudine petalorum. *Brown mss.*

Nat. of the South Coast of New Holland. *Robert Brown.* ♄.

20. M. *linariifolia,* foliis oppositis lanceolato-linearibus acutis trinervibus, spicis oblongis glabris, phalangibus polyandris longitudinaliter pinnatis. *Brown mss.*

Melaleuca linariifolia. *Willden. sp. pl.* 3, *p.* 1482. *Smith exot. bot.* 1, *p.* 109, *t.* 56.

Nat. of New South Wales. Colonel *William Paterson.* ♄.

21. M. *hypericifolia,* foliis oppositis elliptico-oblongis 3-nervibus: nervis lateralibus obsoletis margini recurvo approximatis, spicis glaberrimis, phalangibus polyandris: unguibus elongatis; filamentis radiantibus. [416

Melaleuca hypericifolia. *Willden. sp. pl.* 3, *p.* 1433. *Andrews's reposit.* 200. *Venten. cels.* 10.

Nat. of New South Wales. Admiral *Phillip.* ♄.

22. M. *squarrosa,* foliis oppositis ovatis acutis 5—7-nervibus petiolatis, spicis oblongis ovalibusque: bracteis foliaceis, calycis laciniis enervibus obtusis, phalangium unguibus brevissimis.

Melaleuca squarrosa. *Willden. sp. pl. p.* 430. *Labillard. nov. holl.* 2, *p.* 28, *t.* 169.

Melaleuca myrtifolia. *Venten. malmais.* 47.

Nat. of New South Wales and Van Diemen's Island. Mr. *David Nelson.* ♄.

23. M. *calycina,* foliis oppositis ovato-lanceolatis 3—5-nervibus subsessilibus, glomerulis paucifloris, calycis laciniis acutis enervibus, phalangibus polyandris: unguibus petalo brevioribus. *Brown mss.*

Nat. of the South-west Coast of New Holland. *Robert Brown.* ♄.

24. M. *densa,* foliis ternis obovatis trinervibus glabris, spicis oblongis ovalibusve. *Brown mss.*
Nat. of the South-west Coast of New Holland. *Robert Brown.* ♄.

417] TRISTANIA. *Brown mss.*

Staminum phalanges 5, petalis oppositæ iisdemque vix longiores. *Antheræ* incumbentes. *Caps.* 3-loc. polysperma (semiexserta v. inclusa et) connata calycis tubo turbinato pedicellato (in pedunculo communi).

1. T. *nereifolia,* foliis oppositis lanceolatis, phalangibus 3—5-andris. *Brown mss.*
Melaleuca nereifolia. *Sims in botan. magaz.* 1058.
Melaleuca salicifolia. *Andrews's reposit.* 485.
Nat. of New South Wales. *Robert Brown.* ♄.

2. T. *laurina,* foliis alternis cuneato-lanceolatis, ramulis calycibusque pubescentibus, capsulis semisuperis. *Brown mss.*
Melaleuca laurina. *Willden. sp. pl.* 3, *p.* 1429.
Nat. of New South Wales. Admiral *Phillip.* ♄.

3. T. *conferta,* foliis lanceolato-ellipticis acutis alternis: terminalibus confertis, calycis laciniis acutis foliaceis. *Brown mss.*
Nat. of New South Wales. *Robert Brown.* ♄.

CALOTHAMNUS. (*Labillard. nov. holl.* 2, *p.* 24.) *Brown mss.*

Staminum phalanges (4-5) petalis oppositæ (aliquæ nunc connatæ v. steriles). *Antheræ* basi insertæ, integerrimæ. *Caps.* 3-loc. polysperma, connata et inclusa calycis tubo incrassato basi adnato (ramo).

1. C. *quadrifida,* floribus 4-fidis, phalangibus distinctis [418 æqualibus 12—15-andris, foliis adultis fructibusque glabris. *Brown mss.*

Nat. of the South-west Coast of New Holland. *Robert Brown.* ♄.

2. C. *villosa,* floribus 5-fidis, phalangibus distinctis æqualibus polyandris, foliis adultis fructibusque villosis. *Brown mss.*

Nat. of the South-west Coast of New Holland. *Robert Brown.* ♄.

3. C. *gracilis,* floribus 5-fidis, phalangibus distinctis æqualibus 3-andris, foliis longissimis fructibusque exsertis glabris, caule ramoso. *Brown mss.*

Nat. of the South-west Coast of New Holland. *Robert Brown.* ♄.

BEAUFORTIA. *Brown mss.*

Staminum phalanges 5, petalis oppositæ. *Antheræ* basi insertæ: apice bifidæ lobis deciduis! *Caps.* 3-loc. monosperma, connata et inclusa calycis tubo incrassato basi adnato (ramo).

1. B. *decussata,* foliis oppositis decussatis ovatis ovalibusve multinervibus, phalangium unguibus longissimis; filamentis radiantibus. *Brown mss.*

Nat. of the South-west Coast of New Holland. *Robert Brown.* ♄.

2. B. *sparsa,* foliis sparsis ovalibus multinervibus. [419 *Brown mss.*

Nat. of the South-west Coast of New Holland. *Robert Brown.* ♄.

GENERA ET SPECIES QUÆDAM

PLANTARUM COMPOSITARUM,

QUÆ

IN HORTO KEWENSI COLUNTUR.

[*Extracted from 'Hortus Kewensis,' 2nd Edition, Vols. IV and V, var. pages.*]

LONDON.

1812-1813.

COMPOSITÆ.

IXODIA. *Brown mss.* [iv. 517

Recept. paleaceum. *Pappus* nullus. *Cal.* imbricatus, squamis interioribus radiantibus coloratis.

1. Ixodia *Achillæoides. Brown mss.*
Nat. of the South Coast of New Holland. *Robert Brown.* ♄.

DONIA. *Brown mss.* [v. 82

Recept. nudum. *Pappus* setaceus, caducus. *Calyx* imbricatus, hemisphæricus.

1. D. *glutinosa,* foliis ovato-oblongis serratis calycibusque viscidis. *Brown mss.*
Doronicum glutinosum. *Willden. sp. pl.* 3, *p.* 2115.
Aster glutinosus. *Cavanill. ic.* 2, *p.* 52, *t.* 168.
Nat. of Mexico. ♄.

PODOLEPIS. (*Labill. nov. holl.* 2, *p.* 56.) *Brown mss.*

Recept. nudum. *Pappus* pilosus. *Calyx* imbricatus scariosus hemisphæricus: squamis unguiculatis.

1. P. *rugata,* squamis calycis rugosis obtusis, caule simplici. *Brown mss.*
Podolepis rugata. *Labill. nov. holl.* 2, *p.* 57, *t.* 208.
Nat. of the South-west Coast of New Holland. ♃.

2. P. *acuminata,* squamis calycis æquatis ovatis acuminatis, caule subsimplici. *Brown mss.*

Scalia Jaceoides. *Sims in Botan. magaz.* 956.

Nat. of New South Wales. *Robert Brown.* ♃.

v. 137] CULLUMIA. *Brown mss.*

Recept. favosum. *Semina* glabra. *Pappus* nullus. *Cal.* monophyllus: foliolis imbricatis tectus.

1. C. *ciliaris,* foliis ovatis glabris imbricatis bifariam ciliato-spinosis: spina terminali reflexa. *Brown mss.*

Berckheya ciliaris. *Willden. sp. pl.* 3, *p.* 2273.

Carlina foliis imbricatis oblongis reticulatis et in aculeum aduncum desinentibus. *Burm. afr.* 151, *t.* 54, *f.* 1.

Nat. of the Cape of Good Hope. ♄.

2. C. *setosa,* foliis ovato-lanceolatis glabris recurvatis ciliato-spinosis. *Brown mss.*

Berckheya setosa. *Willden. sp. pl.* 3, *p.* 2273. (exclus. syn. Commelini.)

Nat. of the Cape of Good Hope. ♄.

v. 138] 3. C. *squarrosa,* foliis subulatis recurvatis patulisve spinuloso-ciliatis subtus sulcatis: adultis ramisque glabriusculis. *Brown mss.*

Berckheya squarrosa. *Willden. sp. pl.* 3, *p.* 2272.

Rohria squarrosa. *Thunb. in act. soc. nat. scrut. hafn.* 3, *part.* 1, *pag.* 100, *t.* 5.

Nat. of the Cape of Good Hope. ♄.

BERCKHEYA. (*Gen. pl.* 1329.) *Brown mss.*

Recept. favosum. *Semina* villosa. *Pappus* paleaceus (nunc setoso-paleaceus ciliatus). *Cal.* monophyllus: foliolis imbricatis tectus.

1. B. *cynaroides,* foliis caulinis alternis amplexicaulibus spinuloso-ciliatis; radicalibus elongatis integris inermibus

subtus tomentosis, calycis foliolis ovatis integerrimis. *Brown mss.*
Berckheya cynaroides. *Willden. sp. pl.* 3, *p.* 2275.
Nat. of the Cape of Good Hope. ♃.

2. B. *obovata,* foliis alternis cuneato-lanceolatis spinoso-dentatis utrinque glabris, foliolis calycis dentato-spinosis. *Brown mss.*
Berckheya obovata. *Willden. sp. pl.* 3, *p.* 2269.
Basteria aculeata. *Houtt. nat. hist.* 6, *p.* 158, *t.* 34, *f.* 2.
Nat. of the Cape of Good Hope. ♄.

3. B. *incana,* foliis alternis ovatis spinoso-dentatis subtus caulibusque incanis, calycis foliolis dentato-spinosis [v. 139
subtus tomentosis. *Brown mss.*
Berckheya incana. *Willden. sp. pl.* 3, *p.* 2269.
Gorteria asteroides. *Jacqu. ic.* 3, *t.* 591.
Nat. of the Cape of Good Hope. ♄.

4. B. *cernua,* foliis alternis lanceolatis amplexicaulibus spinoso-dentatis ciliatis utrinque glabris, floribus cernuis, pappo setoso-ciliato. *Brown mss.*
Gorteria cernua. *Willden. sp. pl.* 3, *p.* 2268.
Gorteria araneosa. *Meerb. ic.* 1, *t.* 40.
Nat. of the Cape of Good Hope. ♂.

DIDELTA. (*Gen. pl.* 1351.) *Brown mss.*

Recept. favosum includens semina. *Pappus* multipartitus setoso-paleaceus dentatus. *Cal.* monophyllus: tectus foliolis: exterioribus maximis.

1. D. *carnosum,* foliis alternis.
Didelta carnosa. *Willden. sp. pl.* 3, *p.* 2262.
Didelta tetragoniæfolia. *L'Herit. stirp. nov.* 55, *t.* 28.
Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

2. D. *spinosum,* foliis oppositis.

Didelta spinosa. *Willden. sp. pl.* 3, *p.* 2262. *Wendl. obs.* 33, *t.* 4, *f.* 32.

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

v. 140] GORTERIA. (*Gen. pl.* 1328.) *Brown mss.*

Recept. scrobiculatum. *Pappus:* margo ciliatus. *Cal.* monophyllus: foliolis imbricatis tectus; fructus induratus connivens deciduus.

1. GORTERIA *personata.*

Gorteria personata. *Willden. sp. pl.* 3, *p.* 2265. *Jacqu. collect.* 4, *p.* 224, *t.* 21, *f.* 1.

Nat. of the Cape of Good Hope. ⊙.

GAZANIA. (*Gærtn. sem.* 2, *p.* 451.) *Brown mss.*

Recept. epaleatum (nudum; v. alveolatum germinibus exsertis.) *Semina* villosissima. *Pappus* piloso-paleaceus. *Cal.* monophyllus: tubo foliolis imbricatis tecto v. nudo.

1. G. *rigens,* foliis spathulato-lanceolatis indivisis passim pinnatifidis subtus tomentosis, scapo unifloro calcycibusque glabris, caule decumbente. *Brown mss.*

Gorteria rigens. *Willden. sp. pl.* 3, *p.* 2267. *Curtis magaz.* 90.

Nat. of the Cape of Good Hope. ♄.

2. G. *Pavonia,* foliis pinnatifidis supra pilosis subtus tomentosis: laciniis ovali-lanceolatis, scapo unifloro, caule decumbente. *Brown mss.*

Gazania Pavonia. *Andrews's reposit.* 523.

Nat. of the Cape of Good Hope. Mr. *James Niven.* ♂.

3. G. *subulata,* caule folioso decumbente unifloro, foliis subulato-linearibus margine revolutis subtus tomentosis. [v. 141 *Brown mss.*

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

CRYPTOSTEMMA. *Brown mss.*

Recept. favosum. *Pappus* paleaceus lana implexa seminis tectus. *Cal.* imbricatus.

1. C. *calendulaceum,* ligulis indivisis, foliis pinnatifidis dentatis subtus tomentosis. *Brown mss.*
Arctotis calendulacea. *Willden. sp. pl.* 3, *p.* 2347. *Jacqu. hort. schœnbr.* 2, *p.* 16, *t.* 157.
Nat. of the Cape of Good Hope. ⊙.

2. C. *hypochondriacum,* ligulis (3-5-) partitis, foliis lyratis tomentosis. *Brown mss.*
Arctotis hypochondriaca. *Willden. sp. pl.* 3, *p.* 2348.
Nat. of the Cape of Good Hope. ⊙.

3. C. *runcinatum,* ligulis (3-5-) partitis, foliis runcinatis dentatis subtus tomentosis. *Brown mss.*
Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ⊙.

ARCTOTHECA. (*Wendl. hort. herrenhus.* 8.) *Brown mss.*

Recept. favosum. *Pappus* nullus. *Cal.* imbricatus.

1. ARCTOTHECA *repens. Willden. sp. pl.* 3, *p.* 2365. [v. 142
Arctotis repens. *Jacqu. hort. schœnbr.* 3, *p.* 31, *t.* 306.
Nat. of the Cape of Good Hope. ♃.

SPHENOGYNE. *Brown mss.*

Recept. paleis distinctis. *Pappus* paleaceus, simplex. *Stigmata* apice dilatato subtruncato. *Cal.* imbricatus: squamis intimis (omnibusve) apice dilatato scarioso.

1. S. *anthemoides,* herbacea glabra, foliis bipinnatifidis pinnatifidisve lineari-filiformibus, pappi foliolis albis: axi

subulato discolori. *Willden. sp. pl.* 3, *p.* 2361. *Botan. magaz.* 544.

Arctotis paradoxa. [*Hort. Kew.*] *Edit. prior.* 3, *p.* 273.

Nat. of the Cape of Good Hope. ⊙.

2. S. *crithmifolia,* fruticosa glabra, foliis pinnatifidis lineari-filiformibus, foliolis exterioribus calycis subulatis. *Brown mss.*

Arctotis paleacea. *Willden. sp. pl.* 3, *p.* 2359.

Arctotis crithmoides. *Berg. cap.* 326.

Nat. of the Cape of Good Hope. ♄.

3. S. *scariosa,* fruticosa, foliis bipinnatifidis pinnatifidisve lineari-filiformibus glabris, calycis squamis omnibus scariosis obtusis nitidis: extimis sessilibus. *Brown mss.*

Arctotis scariosa. *Willden. sp. pl.* 3, *p.* 2360.

v. 143] *Nat.* of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

4. S. *abrotanifolia,* fruticosa, foliis 2-3-pinnatifidis calycibusque tomentosis. *Brown mss.*

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

5. S. *dentata,* fruticosa, foliis pinnatifidis glabriusculis: laciniis 2-3-dentatis: dentibus piliferis, calycis foliolis exterioribus lanceolatis. *Brown mss.*

Arctotis dentata. *Willden. sp. pl.* 3, p. 2359.

Chrysanthemum foliorum pinnis brevissimis dentatis. *Burm. afr.* 175, *t.* 64.

Nat. of the Cape of Good Hope. ♄.

6. S. *odorata,* fruticosa, foliis planis glabris apice inciso-pinnatifidis, calycis foliolis exterioribus apice scariosis, seminibus glabris: pappo obsoleto. *Brown mss.*

Anthemis odorata. *Willden. sp. pl.* 3, *p.* 2186.

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

ARCTOTIS. (*Gen. pl.* 1340.) *Brown mss.* [v. 169

Recept. setoso-alveolatum. *Semina* dorso semi-biloculari v. bisulco. *Pappus* paleaceus. *Cal.* imbricatus: squamis apice scariosis.

1. A. *acaulis,* caule brevissimo decumbente, foliis utrinque incanis ternato-lyratis dentatis, calycinis squamis exterioribus adpressis. *Willden. sp. pl.* 3, *p.* 2348.
Arctotis acaulis. *Trew, ehret.* 53, *t.* 93.
Nat. of the Cape of Good Hope. ♃.

2. A. *tricolor,* foliis subtus tomentosis ovatis integerrimis lyratisve dentatis, scapo sulcato unifloro, squamis calycinis exterioribus reflexis. *Willden. sp. pl.* 3, *p.* 2349.
Arctotis tricolor. *Jacqu. hort. schœnbr.* 2, *p.* 27, *t.* 159.
Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♃.

3. A. *undulata,* foliis subtus tomentosis undulato-den- [v. 170
tatis ovatis lyratisve, scapis unifloris striatis, calycinis squamis exterioribus reflexis. *Willden. sp. pl.* 3, *p.* 2349.
Arctotis undulata. *Jacqu. hort. schœnbr.* 2, *p.* 17, *t.* 160.
Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♃.

4. A. *grandiflora,* foliis pinnatifidis denticulatis arachnoideis triplinerviis.
Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♂
Obs. Caulescens. *Radius* maximus. *Petala* straminea, subtus rubore tincta, supra prope basin lutescentia, ore nigro-purpureo.

5. A. *glaucophylla,* foliis canescentibus pinnatifidis repando-subdentatis, caule basi ramoso, calycinis squamis exterioribus reflexis. *Willden. sp. pl.* 3, *p.* 2350.
Arctotis glaucophylla. *Jacqu. hort. schœnbr.* 2, *p.* 22, *t.* 170.
Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♃.

6. A. *plantaginea,* foliis lanceolato-ovatis nervosis denticulatis amplexicaulibus. *Willden. sp. pl.* 3, *p.* 2350.

Nat. of the Cape of Good Hope. ♃.

v. 171] 7. A. *argentea,* foliis lanceolato-linearibus integerrimis tomentosis. *Willden. sp. pl.* 3, *p.* 2351.

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♂.

8. A. *rosea,* caule procumbente, foliis spathulato-lanceolatis repando-dentatis incanis, pappo duplici. *Willden. sp. pl.* 3, *p.* 2351.

Arctotis rosea. *Jacqu. hort. schœnbr.* 2, *p.* 18, *t.* 162.

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♃.

9. A. *decumbens,* caule procumbente, foliis oblongo-lanceolatis inæqualiter dentatis canescentibus: subtus tomentosis trinerviis, calycinis squamis exterioribus adpressis. *Willden. sp. pl.* 3, *p.* 2351.

Arctotis decumbens. *Jacqu. hort. schœnbr.* 3, *p.* 68, *t.* 381.

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♃.

10. A. *angustifolia,* caule ramoso adscendente, foliis tomentosis spathulato-lanceolatis subdentatis trinerviis pubescentibus, calycinis squamis exterioribus reflexis. *Willden. sp. pl.* 3, *p.* 2352.

Nat. of the Cape of Good Hope. ♄.

11. A. *flaccida,* caule ramoso herbaceo adscendente, foliis spathulato-lanceolatis integerrimis trinerviis pubescentibus, calycinis squamis omnibus reflexis. *Willden. sp. pl.* 3, *p.* 2352.

v. 172] Arctotis flaccida. *Jacqu. hort. schœnbr.* 2, *p.* 19, *t.* 163.

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ⊙.

12. A *decurrens,* caule fruticoso, foliis hirtis oblongis indivisis subdentatis. *Willden. sp. pl.* 3, *p.* 2353.

Arctotis decurrens. *Jacqu. hort. schœnbr.* 2, *p.* 20, *t.* 165.

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

13. A. *reptans*, caule herbaceo adscendente, foliis hirtis subtus incanis: inferioribus lyrato-dentatis; superioribus lanceolatis dentatis. *Willden. sp. pl.* 3, *p.* 2354.

Arctotis reptans. *Jacqu. hort. schœnbr.* 3, *p.* 69, *t.* 382.

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♃.

14. A. *auriculata*, caule fruticoso niveo-tomentoso, foliis lyratis amplexicaulibus tomentosis dentatis: lobo terminali rhombeo. *Willden. sp. pl.* 3, *p.* 2354.

Arctotis auriculata. *Jacqu. hort. schœnbr.* 2. *p.* 22, *t.* 169.

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

15. A. *fastuosa*, caule erecto herbaceo, foliis hirtis oblongis dentatis, calycinis squamis exterioribus reflexis ciliatis. *Willden. sp. pl.* 3, *p.* 2354.

Arctotis fastuosa. *Jacqu. hort. schœnbr.* 2, *p.* 21, *t.* 166.

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* [v. 173 ♂.

16. A. *spinulosa*, caule erecto herbaceo, foliis cano-hirtis viscosis oblongis amplexicaulibus mucronato-dentatis, calycinis squamis exterioribus patulis. *Willden. sp. pl.* 3, *p.* 2355.

Arctotis spinulosa. *Jacqu. hort. schœnbr.* 2, *p.* 21, *t.* 167.

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♄.

17. A. *aspera*, caule erecto fruticoso, foliis pinnatifidis scabris subtus tomentosis margine revolutis: laciniis lanceolatis obtusis mucronato-dentatis. *Willden. sp. pl.* 3, *p.* 2356.

α. Anemonospermos africana, foliis cardui benedicti, florum radiis intus sulphureis. *Commel. hort.* 2, *p.* 43, *t.* 22.

β. Anemonospermos afra, folio Jacobææ tenuiter laciniato, flore aurantio pulcherrimo. *Boerh. lugdb.* 1, *p.* 100, *cum tab.*

Nat. of the Cape of Good Hope. ♄.

v. 180] ERIOCEPHALUS. (*Gen. pl.* 1344.) *Brown mss.*

Recept. paleaceum. *Pappus* nullus. *Cal.* duplex: interior 1-phyllus; exterior 5-phyllus.

1. E. *frutescens,* foliis sericeis, floribus corymbosis.
Eriocephalus africanus. *Willden. sp. pl.* 3, *p.* 2384. *Botan. magaz.* 833.
Nat. of the Cape of Good Hope. ♄.

2. E. *racemosus,* foliis sericeis, floribus racemosis.
Eriocephalus racemosus. *Willden. sp. pl.* 3, *p.* 2385.
Nat. of the Cape of Good Hope. ♄.

v. 184] CASSINIA. *Brown mss.*

Calyces 2-flori, 4-phylli. *Corollulæ* hermaphroditæ. *Pappus* paleaceus, penicillatus. *Recept. partiale* nudum.

v. 185] 1. CASSINIA *aurea. Brown mss.*
Nat. of the South Coast of New Holland. *Robert Brown.* ♃.

GENERA ET SPECIES

PLANTARUM ORCHIDEARUM,

QUÆ

IN HORTO KEWENSI COLUNTUR.

[*Extracted from 'Hortus Kewensis,' 2nd Edition, Vol. V, pp.* 188—222.]

LONDON.

1813.

GYNANDRIA. [188

MONANDRIA.

I. *Anthera* adnata subterminalis persistens. *Pollinis massæ* e lobulis angulatis elastice cohærentibus; basi affixæ.

ORCHIS. *Brown prodr.* 312.

Cor. ringens. *Labellum* basi subtus calcaratum. *Glandulæ* (1—2) pedicellorum pollinis inclusæ cucullo unico.

1. O. *Morio,* labello trilobo: lobis crenatis obtusis: medio emarginato, petalis adscendentibus obtusis, cornu conico adscendente germine breviore. *Willden. sp. pl.* 4, *p.* 18. *Curtis lond. Engl. bot.* 2059.
Nat. of Britain. ♃.

2. O. *mascula,* labello trilobo crenulato obtuso: lobo medio bifido, petalis acutis: exterioribus reflexis, cornu conico adscendente germinis longitudine. *Willden. sp. pl.* 4, *p.* 18. *Engl. bot.* 631.
Nat. of Britain. ♃.

3. O. *ustulata,* labello tripartito: laciniis linearibus [189
punctato-scabris: media bipartita, petalis erectis acutis, cornu uncinato germine triplo breviore, bracteis germen subæquantibus. *Willden. sp. pl.* 4, *p.* 20. *Engl. bot.* 18.
Nat. of England. ♃.

4. O. *fusca,* labello tripartito punctato-scabro: laciniis lateralibus oblongis; intermedià ampla biloba crenata cum mucrone interjecto, petalis acutis conniventibus, cornu rectiusculo germine triplo breviore, bracteis germine quadruplo brevioribus. *Willden. sp. pl.* 4, *p.* 23. *Curtis lond.*

Orchis militaris. *Engl. bot.* 16.

Nat. of England. ♃.

5. O. *militaris,* labello tripartito punctato-scabro: laciniis lateralibus linearibus; intermedia biloba obtusa cum mucrone interjecto, petalis acutis conniventibus, cornu recto germine duplo breviore, bracteis obsoletis. *Willden. sp. pl.* 4, *p.* 22. *Engl. bot.* 1873.

Nat. of England. ♃.

6. O. *globosa,* labello tripartito: lacinia media emarginata, petalis apice mucronatis, cornu germine duplo breviore, spica dense ovata, foliis lanceolatis. *Willden. sp. pl.* 4, *p.* 14. *Jaqu. austr.* 3, *p.* 36, *t.* 265.

Nat. of Austria and Switzerland. ♃.

7. O. *pyramidalis,* labello tripartito: superne basi bicorni; laciniis æqualibus integerrimis, cornu germen sub-
190] æquante, spica densa oblonga. *Willden. sp. pl.* 4, *p.* 14. *Engl. bot.* 110.

Nat. of Britain. ♄.

8. O. *hircina,* labello tripartito: laciniis lateralibus lineari-subulatis; media elongata germine triplo longiore lineari bifida, petalis conniventibus, cornu brevissimo conico didymo. *Willden. sp. pl.* 4, *p.* 28.

Satyrium hircinum. *Eng. bot.* 34.

Nat. of England. ♄.

9. O. *latifolia,* labello leviter trilobo lateribus reflexo, petalis superioribus conniventibus; binis lateralibus reflexis, cornu conico germine breviore, bracteis flore longioribus. *Willden. sp. pl.* 4, *p.* 28. *Curtis lond. Engl. bot.* 2308.

Nat. of Britain. ♃.

10. O. *maculata*, labello plano trilobo crenato, petalis superioribus conniventibus; lateralibus patentibus, cornu cylindraceo germine breviore, bracteis longitudine germinis. *Willden. sp. pl.* 4, *p.* 31. *Engl. bot.* 632.
Nat. of Britain. ♃.

11. O. *spectabilis*, labello obovato indiviso crenato retuso, petalis rectis: lateralibus longioribus, cornu clavato germine breviore, bracteis flore longioribus, caule aphyllo. *Willden. sp. pl.* 4, *p.* 36.
Nat. of North America. ♃.

12. O. *papilionacea*, labello obovato indiviso dentato [191 emarginato, petalis nervosis conniventibus, cornu subulato germine breviore, bracteis membranaceis coloratis germine longioribus. *Willden. sp. pl.* 4, *p.* 24.
Nat. of Spain and Naples. ♃.

GYMNADENIA. *Brown mss.*

Cor. ringens. *Labellum* basi subtus calcaratum. *Glandulæ* pedicellorum pollinis nudæ approximatæ.

1. Gymnadenia *conopsea.* *Brown mss.*
Orchis conopsea. *Willden. sp. pl.* 4, *p.* 32. *Engl. bot.* 10.
Nat. of Britain. ♃.

ACERAS. *Brown mss.*

Cor. ringens. *Labellum* ecalcaratum. *Glandulæ* pedicellorum pollinis cucullo communi inclusæ.

1. A [*anthropophora*] labello germine longiore. *Brown mss.*
Ophrys anthropophora. *Willden. sp. pl.* 4, *p.* 63. *Curtis lond.* *Engl. bot.* 29.
Nat. of England. ♃.

HERMINIUM. *Brown mss.*

Cor. subpatens. *Labellum* ecalcaratum. *Glandulæ* massarum pollinis nudæ distinctæ.

1. H. *Monorchis,* foliis radicalibus lanceolatis binis. *Brown mss.*
Ophrys Monorchis. *Willden. sp. pl.* 4, *p.* 61. *Engl. bot.* 71.
192} *Nat.* of England. ♃

HABENARIA. *Brown prodr.* 312.

Cor. ringens. *Labellum* basi subtus calcaratum. *Glandulæ pollinis* nudæ distinctæ (loculis pedicellorum adnatis v. solutis distinctis).

1. H. *nigra,* cornu abbreviato didymo, labello ovato acuminato, spica densa ovata, foliis linearibus. *Brown mss.*
Orchis nigra. *Willden. sp. pl.* 4, *p.* 35.
Satyrium nigrum. *Fl. dan.* 998.
Nat. of the Alps of Switzerland, Austria, and Lapland. ♃.

2. H. *viridis,* cornu abbreviato didymo, labello lineari tridentato: lateralibus acutis; medio brevissimo, bracteis flore sesquilongioribus. *Brown mss.*
Orchis viridis. *Willden. sp. pl.* 4, *p.* 33.
Satyrium viride. *Engl. bot.* 94.
Nat. of Britain. ♃.

3. H. *bracteata,* cornu abbreviato didymo, labello lineari retuso-tridentato: lateralibus obtusis; medio obsoleto, bracteis flore duplo longioribus. *Brown mss.*
Orchis bracteata. *Willden. sp. pl.* 4, *p.* 34.
Orchis bractealis. *Salisb. paradis.* 110.
Nat. of North America. ♃.

4. H. *albida*, cornu obtuso germine triplo breviore, [193
labello tripartito : laciniis acutis : media majore. *Brown mss.*
Orchis albida. *Willden. sp. pl.* 4, *p.* 38.
Satyrium albidum. *Engl. bot.* 505.
Nat. of Britain. ♃.

5. H. *hyperborea*, cornu cylindrico germine breviore, labello integerrimo lineari-oblongo. *Brown mss.*
Orchis hyperborea. *Willden. sp. pl.* 4, *p.* 37.
Nat. of Iceland and Labrador. ♃.

6. H. *bifolia*, cornu filiformi germine duplo longiore, labello lineari integerrimo, foliis radicalibus binis oblongis basi attenuatis. *Brown mss.*
Orchis bifolia. *Willden. sp. pl.* 4, *p.* 10. *Curtis lond. Engl. bot.* 22.
Nat. of Britain. ♃.

7. H. *herbiola*, cornu filiformi germine breviore, labello oblongo obtuso basi utrinque dentato; palato unidentato, bracteis flore longioribus. *Brown mss.*
Nat. of North America. ♃.

8. H. *fimbriata*, cornu filiformi germine longiore, labello tripartito laciniis cuneiformibus fimbriatis. *Brown mss.*
Orchis fimbriata. *Willden. sp. pl.* 4, *p.* 39.
Nat. of Canada and Newfoundland. ♃.

9. H. *cristata*, cornu filiformi germine breviore, labello [194
lanceolato pinnatim-fimbriato, petalis interioribus dentato-incisis. *Brown mss.*
Orchis cristata. *Willden. sp. pl.* 4, *p.* 9.
Nat. of North America. ♃.

10. H. *ciliaris*, cornu filiformi germine longiore, labello lanceolato pinnatim-fimbriato, petalis interioribus fimbriato-incisis. *Brown mss.*
Orchis ciliaris. *Willden. sp. pl.* 4, *p.* 8. *Andrews's reposit.* 42.
Nat. of North America. ♃.

BARTHOLINA. *Brown mss.*

Cor. ringens: petalis interioribus inferne labello connatis. *Labellum* basi subtus calcaratum. *Pedicelli pollinis* elongati: loculis adnatis; glandulis distinctis lobulo exteriore semitectis.

1. Bartholina *pectinata.* *Brown mss.*
Orchis pectinata. *Willden. sp. pl.* 4, *p.* 11.
Orchis burmanniana. *Swartz in Web. et Mohr archiv.* 1, *p.* 55, *t.* 3.
Nat. of the Cape of Good Hope. ♃.

SERAPIAS. (*Swartz in act. stockholm.* 1800, *p.* 223.) *Brown mss.*

Cor. ringens. *Labellum* ecalcaratum. *Columna* cuspidata. *Pedicelli pollinis* inserti glandula unica cucullo inclusa.

195] 1. S. *Lingua,* labello tripartito: laciniis lateralibus obtusis erectis conniventibus; media oblonga lanceolata acutiuscula glabriuscula dependente. *Willden. sp. pl.* 4, *p.* 70.
Orchis montana italica, flore ferrugineo, lingua oblonga. *Moris. hist.* 3, *p.* 495, *s.* 12, *t.* 14, *f.* 21.
Nat. of the South of Europe. ♃.

2. S. *cordigera,* labello tripartito: laciniis lateralibus obtusis erectis conniventibus; media ovata acuminata disco pilosa dependente. *Willden. sp. pl.* 4, *p.* 71. *Andrews's reposit.* 475.
Nat. of Spain, Italy, and the Levant. ♃.

OPHRYS. *Brown prodr.* 313.

Cor. subpatens. *Labellum* ecalcaratum. *Glandulæ pollinis* cucullis distinctis inclusæ.

1. O. *apifera*, labello trifido: lobo medio majore semitrifido: lacinia media longiore subulata deflexa. *Brown mss.*
Ophrys apifera. *Willden. sp. pl.* 4, *p.* 66. *Curtis. lond. Engl. bot.* 383.
Nat. of England. ♃.

2. O. *aranifera*, labello trilobo: lateralibus abbreviatis obtusis; medio retuso. *Brown mss.*
Ophrys aranifera. *Willden. sp. pl.* 4, *p.* 66. *Engl. bot.* 65.
Nat. of England. ♃.

3. O. *muscifera*, labello trifido: lobo medio majore [196 bilobo, anthera obtusa. *Brown mss.*
Ophrys muscifera. *Smith fl. brit.* 3, *p.* 937. *Engl. bot.* 64.
Ophrys myodes. *Willden. sp. pl.* 4, *p.* 64. *Andrews's reposit.* 471.
Nat. of England. ♃.

SATYRIUM. (*Swartz in act. stockholm.* 1800, *p.* 214.) *Brown mss.*

Cor. ringens: petala 5 antica basi connata. *Labellum* posticum, fornicatum, basi bicalcaratum v. bisaccatum. *Anthera* resupinata. *Stigma* bilabiatum.

1. S. *cucullatum*, foliis radicalibus binis cordato-subrotundis concavis; caulinis remotis cucullatis subretusis, floribus cernuis. *Willden. sp. pl.* 4, *p.* 54.
Orchis bicornis. *Andrews's reposit.* 315.
Nat. of the Cape of Good Hope. ♃.

2. S. *carneum*, foliis radicalibus binis cordato-subrotundis; caulinis vaginæformibus approximatis, spica compacta, petalis extus carinatis.

Orchis carnea. [*Hort. Kew.*] *Edit. prior.*

Nat. of the Cape of Good Hope. Mr. *Fr. Masson.* ♃.

DISA. *Swartz in act. stockholm.* 1800, *p.* 208.

Cor. ringens: galea basi unicalcarata v. saccata petala interiora columnæ accreta. *Labellum* ecalcaratum.

197] 1. D. *cornuta*, galea obtusa; calcare conico deflexo, petalis interioribus bidentatis, labello obvato velutino plano, spica laxa. *Willden. sp. pl.* 4, *p.* 45.

Nat. of the Cape of Good Hope. ♃.

2. D. *spathulata*, galea erecta acuta, labello petiolato apice dilatato trifido, caule paucifloro, foliis linearibus. *Willden. sp. pl.* 4, *p.* 52.

Nat. of the Cape of Good Hope. ♃.

PTERYGODIUM. (*Swartz in act. stockholm.* 1800, *p.* 217.) *Brown mss.*

Cor. subringens: petala exteriora antica horizontalia concava. *Labellum* columnæ adnatum, bilabiatum. *Antheræ* loculis distantibus. *Stigma* adnatum.

1. P. *volucris*, caule triphyllo, labello triangulari sagittato. *Willden. sp. pl.* 4, *p.* 57.

Nat. of the Cape of Good Hope. ♃.

II. *Anthera* stigmati parallela persistens. *Massæ pollinis* v. farinaceæ v. e corpusculis angulatis; apicibus stigmati affixæ.

GOODYERA. *Brown mss.*

Cor. ringens: petalis exterioribus anticis labello inferne gibboso superne indiviso suppositis. *Columna* libera. *Pollen* angulatum.

1. G. *repens,* foliis radicalibus ovatis, labello petalisque [198 lanceolatis. *Brown mss.*
Neottia repens. *Willden. sp. pl.* 4, *p.* 75.
Satyrium repens. *Engl. bot.* 289.
Nat. of Scotland. ♃.

1. G. *pubescens,* foliis radicalibus ovatis, labello ovato acuminato, petalis ovatis. *Brown mss.*
Neottia pubescens. *Willden. sp. pl.* 4, *p.* 76.
Nat. of North America. ♃.

NEOTTIA. (*Swartz in act. stockholm.* 1800, *p.* 224.) *Brown prodr.* 319.

Cor. ringens: petalis exterioribus anticis labello imberbi suppositis; interioribus conniventibus. *Columna* aptera. *Pollen* farinaceum.

1. N. *speciosa,* labello lanceolato indiviso, scapo bracteato, bracteis flore longioribus, foliis oblongis margine apicem versus undulatis. *Willden. sp. pl.* 4, *p.* 72. *Andrews's reposit.* 3. *Botan. mag.* 1374.
Nat. of the West Indies. ♃.

2. N. *orchioides,* foliis radicalibus lato-lanceolatis, spica erecta labello basi cum petalis saccato; lamina acuminata. *Willden. sp. pl.* 4, *p.* 75. *Botan.-mag.* 1036.
Nat. of Jamaica. ♃.

3. N. *picta,* foliis radicalibus oblongo-lanceolatis, scapo [199

bracteato, petalis anticis decurrentibus labello semiinfero ecalcarato suppositis.

Neottia acaulis. *Smith exot. bot.* 2, *p.* 91, *t.* 105. (varietas exscapa.)

Nat. of Trinidad. Mr. *Alexander Anderson.* ♃.

4. N. *elata,* labello obovato emarginato, scapo vaginato, bracteis flore brevioribus, foliis ovatis petiolatis margine planis. *Willden. sp. pl.* 4, *p.* 72. *Redouté liliac.* 164.

Neottia minor. *Andrews's reposit.* 376.

Nat. of Guiana and the West Indies. ♃.

5. N. *cernua,* foliis lanceolatis trinerviis, caule vaginato, floribus recurvato-cernuis, labello oblongo integerrimo acuto. *Willden. sp. pl.* 4, *p.* 75.

Nat. of North America. ♃.

6. N. *spiralis,* foliis radicalibus oblongis subpetiolatis, spica tortili floribus secundis, labio ovato. *Willden. sp. pl.* 4, *p.* 73.

Ophrys spiralis. *Curtis lond. Engl. bot.* 541.

Nat. of Britain. ♃.

PONTHIEVA. *Brown mss.*

Cor. irregularis. *Labellum* posticum, cum petalis interioribus columnæ insertum. *Pollen* farinaceum.

200] 1. P. *glandulosa,* labello unguiculato acuminato, petalis interioribus dimidiato-ovatis.

Neottia glandulosa. *Sims in botan. magaz.* 842.

Nat. of the West Indies. Mr. *Alexander Anderson.* ♃.

DIURIS. (*Smith. in linn. soc. transact.* 4, *p.* 222.) *Brown prodr.* 315.

Cor. irregularis: petala 2 exteriora antica linearia *labello* trifido supposita; interiora unguiculata patula. *Columna:* lobis lateralibus petaloideis. *Pollen* farinaceum.

1. D. *aurea,* labelli lacinia intermedia basi intus bicarinata lateralibus duplo longiore, petalis integerrimis: interioribus ellipticis acutis, foliis linearibus canaliculatis scapo brevioribus. *Brown prodr.* 315.

Diuris aurea. *Smith exot. bot.* 1, *p.* 15, *t.* 9.
Nat. of New South Wales. ♃.

THELYMITRA. *Brown prodr.* 314.

Cor. regularis. *Labellum* sessile petalis subconforme. *Columna* cucullata: lobis lateralibus penicillatis nudisve. *Pollen* farinaceum.

1. T. *ixioides,* corolla patenti, cuculli laciniis lateralibus penicillatis; intermedia trifida: lobulis lateralibus apice erosis medio breviore bifido dorso cristato. *Brown prodr.* 314.

Thelymitra ixioides. *Willden. sp. pl.* 4, *p.* 79. *Smith* [201
exot. bot. 1, *p.* 55, *t.* 29. (absque maculis saturatioribus corollæ.)
Nat. of New South Wales. ♃.

LISTERA. *Brown mss.*

Cor. irregularis. *Labellum* bilobum. *Columna* aptera. *Anthera* basi inserta. *Pollen* farinaceum.

1. L. *ovata,* caule bifolio, foliis ovatis oppositis, columna postice cucullo anthera incumbente aucta.

Ophrys ovata. *Curtis lond. Engl. bot.* 1548.
Epipactis ovata. *Willden. sp. pl.* 4, *p.* 87.
Nat. of Britain. ♃.

2. L. *cordata,* caule bifolio, foliis cordatis oppositis, labello inferne bidentato; lobis apicis lineari-subulatis. *Brown mss.*

Ophrys cordata. *Engl. bot.* 358.
Epipactis cordata. *Willden. sp. pl.* 4, *p.* 88.
Nat. of Britain. ♃

III. *Anthera* terminalis, inserta, persistens. *Massæ pollinis* v. pulvereæ v. e. corpusculis angulatis: basi v. infra apicem affixæ.

EPIPACTIS. *Brown mss.* Epipactidis species. *Swartz in act. stockholm.* 1800, *p.* 231.

Labellum inferne ventricosum; superne v. indivisum; v. 3-lobum lobo medio majore articulatim connexo. *Pollen* farinaceum.

1. E. *latifolia*, foliis ovatis amplexicaulibus; bracteis 202] inferioribus flore longioribus, floribus pendulis, labello integerrimo acuminato petalis breviore, germinibus pubescentibus. *Willden. sp. pl.* 4, *p.* 83.
Serapias latifolia. *Engl. bot.* 269. *Select specim.* 3.
Nat. of Britain. ♃.

2. E. *palustris*, foliis lanceolatis amplexicaulibus, bracteis flore brevioribus, floribus pendulis, labello crenato obtuso petalis æquali, germinibus pubescentibus. *Willden. sp. pl.* 4, *p.* 84.
Serapias palustris. *Engl. bot.* 270.
Nat. of Britain. ♃.

3. E. *pallens*, foliis oblongo-lanceolatis sessilibus, bracteis flore longioribus, floribus erectis, labello obtuso petalis breviore, germinibus glabris. *Willden. sp. pl.* 4, *p.* 85.
Serapias grandiflora. *Engl. bot.* 271.
Nat. of Britain. ♃.

4. E. *ensifolia*, foliis lanceolatis acuminatis subdistichis, bracteis minutissimis subulatis, floribus erectis, labello obtuso petalis duplo breviore, germinibus glabris. *Willden. sp. pl.* 4, *p.* 85.
Serapias ensifolia. *Engl. bot.* 494.
Nat. of Britain. ♃.

5. E. *rubra*, foliis lanceolatis, bracteis germine longiori-

bus, floribus erectis, labello acuto lineis elevatis undulatis, germinibus glabris. *Willden. sp. pl.* 4, *p.* 86.

Serapias rubra. *Engl. bot.* 437.

Nat. of Britain. ♃. [203

POGONIA. *Brown mss.* Pogoniæ species. *Juss. gen.* 65.

Labellum sessile, cucullatum, intus cristatum. *Petala* 5 distincta eglandulosa. *Pollen* farinaceum.

1. P. *divaricata,* radice subpalmata, scapi folio bracteaque lineari-oblongis, petalis exterioribus lanceolato-linearibus.

Arethusa divaricata. *Willden. sp. pl.* 4, *p.* 31. *Lamarck illustr. t.* 729, *f.* 3.

Nat. of North America. ♃.

CALADENIA. *Brown prodr.* 323.

Labellum subunguiculatum, disco glandulis seriatis. *Petala* extus glandulosa: posticum planiusculum; quatuor antica plana labello supposita. *Pollen* farinaceum.

1. C. *alba,* petalis acutiusculis, columna labelloque exvittatis, glandulis labelli biseriatis superioribus arcuatis capitulo concolori; lobo medio longitudinaliter fimbriato disco eglanduloso. *Brown prodr.* 323.

Nat. of New South Wales. *Robert Brown.* ♃.

GLOSSODIA. *Brown prodr.* 325.

Appendix inter labellum eglandulosum et columnam. *Petala* 5 patula æqualia. *Pollen* farinaceum.

1. G. *major,* appendice semibifida: lobis patentibus [204 acutis. *Brown prodr.* 326.

Nat. of New South Wales. *Robert Brown.* ♃.

PTEROSTYLIS. *Brown prodr.* 326.

Labellum unguiculatum: lamina basi appendiculata v. gibbosa. *Cor.* ringens petalis anticis inferne connatis et ungui labelli accretis. *Columna* superne alata. *Pollen* farinaceum.

1. P. *obtusa,* caule folioso unifloro lamina obtusa apice haud angustata, appendice penicillata. *Brown prodr.* 327.
Nat. of New South Wales. *Robert Brown.* ♃.

CALEYA. (Caleana.) *Brown prodr.* 329.

Labellum unguiculatum posticum: lamina peltata cava, foramine exteriore. *Pollen* farinaceum.

1. C. *major,* folio lanceolato-lineari plano, scapo medio unibracteato, lamina labelli lævi: utraque extremitate angustata semiovata. *Brown prod.* 329.
Nat. of New South Wales. *Robert Brown.* ♃.

CALOPOGON. *Brown mss.*

Labellum posticum, unguiculatum: lamina barbata. *Petala* 5 distincta. *Columna* libera. *Pollen* angulatum.

1. Calopogon *pulchellus.* *Brown mss.*
205] Cymbidium pulchellum. *Willden. sp. pl.* 4, *p.* 105.
Limodorum tuberosum. *Curtis magaz.* 116.
Nat. of North America. ♃.

ARETHUSA. *Brown mss.* Arethusæ species. *Swartz in act. stockholm.* 1800, *p.* 230.

Labellum inferne cum columna connatum; superne cucullatum; intus cristatum. *Petala* 5 basi connata. *Pollen* angulatum.

1. ARETHUSA *bulbosa.*
Arethusa bulbosa. *Willden. sp. pl.* 4, *p.* 80.
Helleborine mariana monanthos, flore longo purpurascente liliaceo. *Pluk. mant.* 100, *t.* 348, *f.* 7.
Nat. of North America. ♃.

IV. *Anthera* terminalis mobilis decidua. *Massæ pollinis* demum cereaceæ.

BLETIA. (*Ruiz et Pavon prodr.* 119.) *Brown mss.*

Labellum sessile, cucullatum; nunc basi calcaratum. *Petala* 5 distincta. *Columna* libera. *Massæ pollinis,* 8 v. 4 bilobæ.

1. B. *Tankervilliæ,* labello calcarato indiviso: cornu abbreviato, foliis radicalibus ovato-lanceolatis. *Brown mss.*
Limodorum Tankervilliæ. [*Hort. Kew.*] *Edit. prior.* 3, *p.* 302, *t.* 12. *Willden. sp. pl.* 4, *p.* 122. *Andrews's reposit. Redouté liliac.* 43. *Schneevoogt ic.* 5.
Nat. of China. ♃.

2. B. *verecunda,* labello ecalcarato: costis disci [206 ramosis; lobo medio latiore quam longo; lateralibus superne angustioribus, scapo subramoso. *Brown mss.*
Cymbidium verecundum. *Willden. sp. pl.* 4, *p.* 105.
Limodorum altum. *Botan. magaz.* 930.
Nat. of the West Indies. ♃.

3. B. *florida,* labello ecalcarato: costis disci simplicibus; lobo medio subcuneiformi; lateralibus apice latioribus, scapo subramoso. *Brown mss.*
Cymbidium floridum. *Salisb. prodr.* 9.
Limodorum purpureum. *Redouté liliac.* 83.
Nat. of the West Indies. ♃.

4. B. *hyacinthina,* labello ecalcarato imberbi, massis pollinis quatuor bilobis, caule folioso, floribus racemosis. *Brown mss.*

Cymbidium hyacinthinum. *Smith exot. bot.* 1, *p.* 117, *t.* 60. *Botan. magaz.* 1492.
Nat. of China. Mr. *William Ker.* ♃.

5. B. *capitata,* labello ecalcarato: prope basin intus callo adnato, caule folioso, floribus capitatis. *Brown mss.*
Nat. of the West Indies. ♃.

207] GEODORUM. (*Jackson in Andrews's reposit.* 626.) *Brown mss.*

Labellum cucullato-ventricosum (nunc basi calcaratum,) sessile, cum columna non articulatum. *Petala* conformia subsecunda. *Massæ pollinis* 2, postice lobulo auctæ.

1. G. *purpureum,* scapo foliis longiore, racemo pendulo: floribus alternis, labello ovato acuto picto. *Brown mss.*
Malaxis nutans. *Willden. sp. pl.* 4, *p.* 93.
Limodorum nutans. *Roxb. corom.* 1, *p.* 33, *t.* 40.
Nat. of the East Indies. *William Roxburgh,* M.D. ♃.

2. G. *citrinum,* scapo foliis breviore, spica pendula: floribus congestis, labello basi subcalcarato; apice obtuso integerrimo. *Brown mss.*
Geodorum citrinum. *Andrews's reposit.* 626.
Nat. of the East Indies. *William Roxburgh,* M.D. ♃.

3. G. *dilatatum,* scapo foliis breviore, spica pendula: floribus congestis, labello subcalcarato; apice dilatato crenulato. *Brown mss.*
Limodorum recurvum. *Willden. sp. pl.* 4, *p.* 124. *Roxb. corom.* 1, *p.* 33, *t.* 39.
Nat. of the East Indies. *William Roxburgh,* M.D. ♃.

208] CALYPSO. (*Salisb. paradis.* 89.) *Brown mss.*

Labellum ventricosum prope apicem subtus calcaratum.

Petala adscendentia secunda. *Columna* petaloideo-dilatata. *Massæ pollinis* 4.

1. C. *americana*, labello basi angustato subunguiculato: calcare semibifido laminam superante dentibus acutis, pedunculo germine longiore.

Calypso borealis. *Salisb. paradis.* 89. (exclusis, ni fallor, synonymis.)

Nat. of North America. ♃.

MALAXIS. (*Swartz in act. stockholm.* 1800, *p.* 233.) *Brown mss.*

Labellum explanatum indivisum sessile (sæpius posticum). *Petala* 5 angustiora, patula v. deflexa. *Massæ pollinis* 4 parallelæ, apicibus stigmati affixæ.

1. M. *paludosa*, foliis subquaternis apice scabris, scapo pentagono, labello concavo acuto. *Willden. sp. pl.* 4, *p.* 91. *Engl. bot.* 72.

Nat. of England. ♃.

2. M. *Loeselii*, foliis binis ovato-lanceolatis, scapo trigono, labello apice ovato recurvato. *Willden. sp. pl.* 4, *p.* 93.

Ophrys Loeselii. *Engl. bot.* 47.

Nat. of England. ♃.

3. M. *lilifolia*, foliis binis ovato-lanceolatis, scapo triquetro, petalis interioribus reflexis discoloribus, labello concavo obovato apice acuto. *Willden. sp. pl.* 4, *p.* 92. [209

Ophrys lilifolia. *Andrews's reposit.* 65.

Nat. of North America. ♃.

CORALLORRHIZA. (*Hall. hist.* 2, *p.* 159.) *Brown mss.*

Labellum basi productum: calcare adnato v. libero. *Columna* libera. *Massæ pollinis* 4 obliquæ (nec parallelæ).

1. C. *innata*, calcare abbreviato omnino adnato.
Cymbidium Corallorhizon. *Willden. sp. pl.* 4, *p.* 109.
Ophrys corallorhiza. *Engl. bot.* 1547.
Nat. of Scotland. ♃.

ISOCHILUS. *Brown mss.*

Labellum petalis distinctis conniventibus subconforme. *Massæ pollinis* 4, parallelæ.

1. I. *linearis*, spica terminali, foliis distichis linearibus obtusis emarginatis, caule simplici.
Cymbidium lineare. *Willden. sp. pl.* 4, *p.* 97.
Epidendrum lineare. *Jacqu. amer.* 221, *t.* 131, *f.* 1.
Nat. of the West Indies. ♃.

2. I. *prolifer*, floribus axillaribus, foliis distichis lanceolato-oblongis, caule prolifero; bulbis axillaribus diphyllis.
210] Cymbidium proliferum. *Willden. sp. pl.* 4, *p.* 95.
Nat. of the West Indies. ♃.

ORNITHIDIUM. (*Salisb. in hort. soc. transact.* 1, *p.* 293, absque charactere.) *Brown mss.*

Labellum sessile cucullatum cum basi columnæ connatum. *Petala* conniventia. *Massæ pollinis* 4, obliquæ, postice sulcatæ.

1. Ornithidium *coccineum*.
Ornithidium coccineum. *Salisb. in hort. soc. transact.* 1, *p.* 293.
Cymbidium coccineum. *Willden. sp. pl.* 4, *p.* 94. *Botan. magaz.* 1437.
Nat. of the West Indies. ♃.

STELIS. (*Swartz in Schrader's journal* 1799, 2 *band, p.* 239.) *Brown mss.*

Labellum petalis interioribus nanis subfornicatis conforme. *Petala* 3 exteriora basi connata. *Massæ pollinis* 2.

1. S. *ophioglossoides*, caule unifolio, folio oblongo-lanceolato racemum subæquante, floribus trigonis. *Willden. sp. pl.* 4, *p.* 138.
Epidendrum ophioglossoides. *Jacqu. amer.* 225, *t.* 133, *f.* 2.
Nat. of the West Indies. ♃.

2. S. *micrantha*, caule unifolio elongato, folio lato-lanceolato racemo breviore, floribus hexagonis. *Willden.* [211 *sp. pl.* 4, *p.* 139.
Stelis micrantha. *Smith exot. bot.* 2, *p.* 31, *t.* 75.
Nat. of Jamaica. ♃.

PLEUROTHALLIS. *Brown mss.*

Labellum articulatim connexum cum basi simplici v. brevissime producta columnæ. *Petala* 2 antica exteriorum inferne connata. *Massæ pollinis* 2, exsulcæ.

1. P. *ruscifolia*, caule elongato unifolio, folio ovato-lanceolato, floribus in sinu folii aggregatis. *Brown mss.*
Dendrobium ruscifolium. *Willden. sp. pl.* 4, *p.* 135.
Epidendrum ruscifolium. *Jacqu. amer.* 226, *t.* 133, *f.* 3.
Nat. of the West Indies. ♃.

OCTOMERIA. *Brown mss.*

Labellum articulatum cum processu unguiformi, cujus lateribus petala antica adnata. *Massæ pollinis* 8.

1. O. *graminifolia*, caule elongato unifolio, folio lanceolato, pedunculis geminatis unifloris, radice repente.

Dendrobium graminifolium. *Willden. sp. pl.* 4, *p.* 135.
Helleborine graminea repens biflora. *Plum. ic.* 176, *f.* 1.
Nat. of the West Indies. ♃.

212] AERIDES. (*Swartz in Schrader's journal* 1799, 2 *band*, *p.* 233.) *Brown mss.*

Labellum calcaratum v. saccatum, insertum apice processus unguiformis, cujus lateribus petala antica exteriorum adnata. *Massæ pollinis* 2 postice bilobæ, processu communi stigmatis medio affixæ.

1. A. *odoratum*, calcare adscendente conico-subulato, labelli lobo medio lateralibus breviore, foliis retusis.
Aerides odoratum. *Willden. sp. pl.* 4, *p.* 131.
Nat. of China. ♃.

DENDROBIUM. (*Swartz in nov. act. upsal.* 6, *p.* 82.) *Brown mss.*

Labellum ecalcaratum, articulatum cum apice processus unguiformis, cujus lateribus petala antica adnata, calcar æmulantia. *Massæ pollinis* 4, parallelæ.

1. D. *speciosum*, caulibus erectis apice 2-3-phyllis, foliis ovali-oblongis racemo terminali multifloro brevioribus, petalis angusto-oblongis, labello infra divisuram carinia unica; lobo intermedio ecarinato dilatato. *Brown prodr.* 332.
Dendrobium speciosum. *Smith exot. bot.* 1, *p.* 17, *t.* 10.
Nat. of New South Wales. ♃.

2. D. *linguiforme*, caulibus repentibus, foliis ovalibus obtusis depressis carnosis racemo aliquoties brevioribus, 213] petalis elongato-linearibus acutis, labelli lobo medio undulato tricarinato. *Brown prodr.* 333.
Dendrobium linguiforme. *Smith exot. bot.* 1, *p.* 19, *t.* 11. *Willden. sp. pl.* 4, *p.* 138.
Nat. of New South Wales. ♃.

3. D. *Barringtoniæ*, foliis subternis oblongis nervosis bulbo innatis, scapo subunifloro vaginato. *Willden. sp. pl.* 4, *p.* 132.
Epidendrum Barringtoniæ. *Smith ic. pict.* 25.
Nat. of the West Indies. ♃.

CYMBIDIUM. *Brown mss.* Cymbidii species. *Swartz in nov. act. upsal.* 6, *p.* 70.

Labellum ecalcaratum concavum, cum basi (simplici nec producta) columnæ articulatum. *Petala* patentia distincta. *Massæ pollinis* 2, postice bilobæ.

* Cymbidia vera.

1. C. *aloifolium*, foliis radicalibus lato-linearibus canaliculatis carnosis apice retusis, scapis multifloris pendulis.
Cymbidium aloifolium. *Willden. sp. pl.* 4, *p.* 101.
Epidendrum aloifolium. *Curtis magaz.* 387. *Redouté liliac.* 144.
Nat. of the East Indies. ♃.

2. C. *ensifolium*, foliis radicalibus ensiformibus nervosis, scapo tereti paucifloro, labello ovato sub-recurvato maculato. *Willden. sp. pl.* 4, *p.* 110.
Epidendrum ensifolium. *Smith spicil.* 22, *t.* 24, [214 *Andrews's reposit.* 344.
Epidendrum sinense. *Redouté liliac.* 113.
Nat. of China and Japan. ♃.

3. C. *sinense*, foliis radicalibus ensiformibus nervosis, scapo paucifloro, floribus secundis, petalis striatis: tribus exterioribus reflexis, labello oblongo obtuso reflexo. *Willden. sp. pl.* 4, *p.* 111.
Epidendrum sinense. *Andrews's reposit.* 216. *Botan. magaz.* 888.
Nat. of China. ♃.

4. C. *præmorsum*, caulescens, foliis remotiusculis distichis

lato-linearibus canaliculatis apice præmorsis, spicis oppositifoliis. *Willden. sp. pl.* 4, *p.* 103.
Epidendrum præmorsum. *Roxb. corom.* 1, *p.* 34, *t.* 43.
Nat. of the East Indies. *William Roxburgh,* M.D. ♃.

** Cymbidium spurium.

5. C. *tripterum,* acaule, foliis bulbo innatis radicalibus vaginatis, scapis multifloris, germine trialato. *Willden. sp. pl.* 4, *p.* 94.
Epidendrum tripterum. *Smith ic. pict.* 14.
Nat. of Jamaica. ♃.

215]

BRASSIA. *Brown mss.*

Labellum explanatum indivisum. *Petala* patula distincta. *Columna* aptera. *Massæ pollinis* 2, postice bilobæ; medio affixæ processu communi stigmatis.

1. **Brassia** *maculata. Brown mss.*
Nat. of Jamaica. ♃

ONCIDIUM. (*Swartz in act. stockholm.* 1800, *p.* 239.) *Brown mss.*

Labellum explanatum lobatum basi tuberculatum. *Petala* patentia (2 antica nunc connata). *Columna* alata. *Massæ pollinis* 2, postice bilobæ; medio affixæ processu communi stigmatis.

1. O. *altissimum,* petalis lanceolatis labello longioribus: anticis distinctis, scapo paniculato.
Oncidium altissimum. *Willden. sp. pl.* 4, *p.* 112.
Epidendrum altissimum. *Jacqu. amer.* 229, *t.* 141.
Nat. of the West Indies. ♃.

2. O. *carthagenense,* petalis obovatis unguiculatis labello parum brevioribus anticis distinctis scapo paniculato.

Oncidium carthagenense. *Willden. sp. pl.* 4, *p.* 112.
Epidendrum undulatum. *Botan. magaz.* 777.
Nat. of the West Indies. ♃.

3. O. *bifolium,* petalis obovatis undulatis: anticis con- [216
natis, labello petalis longiore: lobo medio dilatato-reniformi semibifido, scapo racemoso, bulbis diphyllis.
Oncidium bifolium. *Sims in Botan. magaz.* 1491.
Nat. of South America. ♃.

4. O. *triquetrum,* petalis acutis: anticis connatis, labelli lobo medio subrotundo indiviso, scapo racemoso, foliis triquetris.
Cymbidium triquetrum. *Willden. sp. pl.* 4, *p.* 104.
Nat. of Jamaica. ♃.

CYRTOPODIUM. *Brown mss.*

Labellum ungue geniculato; lamina 3-partita. *Petala* 5 distincta. *Massæ pollinis* 2 postice bilobæ.

1. CYRTOPODIUM *Andersonii.* *Brown mss.*
Cymbidium Andersonii. *Lambert in Andrews's reposit.* 651.
Nat. of the West Indies. Mr. *Alex. Anderson.* ♃.

BRASSAVOLA. *Brown mss.*

Labellum ungue simplici; lamina indivisa. *Petala* distincta patula. *Massæ pollinis* 8 (vel plures!).

1. B. *cucullata,* caule unifloro, lamina labelli ciliata.
Cymbidium cucullatum. *Willden. sp. pl.* 4, *p.* 100.
Epidendrum cucullatum. *Botan. magaz.* 543.
Nat. of the West Indies. ♃. [217

BROUGHTONIA. *Brown mss.*

Columna libera v. basi tantum connata *labello* unguiculato (nunc inferne producto in tubulum ovario adnatum). *Massæ pollinis* 4 parallelæ, septis completis persistentibus distinctæ, basi filo granulato elastico auctæ.

1. B. *sanguinea*, foliis geminis oblongis bulbo innatis, scapo diviso. *Brown mss.*
Dendrobium sanguineum. *Willden. sp. pl.* 4, *p.* 132.
Viscum radice bulbosa minus, delphinii flore rubro specioso. *Sloan. jam.* 1, *p.* 250, *t.* 121, *f.* 2.
Nat. of Jamaica. ♃.

EPIDENDRUM. (*Swartz in nov. act. upsal.* 6, *p.* 66.) *Brown mss.*

Columna cum ungue labelli longitudinaliter connata in tubum (quandoque decurrentem ovarium). *Massæ pollinis* 4 parallelæ, septis completis persistentibus distinctæ, basi filo granulato elastico auctæ.

1. E. *cochleatum*, foliis geminis oblongis bulbo innatis, scapo elongato, lamina labelli cordata obtusa. *Willden. sp. pl.* 4, *p.* 114. *Andrews's reposit.* 13. *Botan. magaz.* 572.
Nat. of the West Indies. ♃.

2. E. *fragrans*, folio lanceolato bulbo innato, scapo [218
abbreviato multifloro, lamina labelli cordata acuminata.
Epidendrum fragrans. *Willden. sp. pl.* 4, *p.* 114. *Andrews's reposit.* 645.
Epidendrum cochleatum. *Curtis magaz.* 152.
Nat. of Jamaica. ♃.

3. E. *secundum*, caule simplici, foliis oblongis emarginatis, pedunculo terminali longissimo, spica laxa secunda, columna longitudine petalorum. *Willden. sp. pl.* 4, *p.* 119.

Epidendrum secundum. *Jacq. amer.* 224, *t.* 137.
Nat. of the West Indies. ♃.

4. E. *fuscatum*, caule simplici, foliis oblongis acuminatisve, pedunculo terminali elongato, spica globosa, columna petalis breviore. *Willden. sp. pl.* 4, *p.* 120. *Smith spicil.* 21, *t.* 23.
Nat. of the West Indies. ♃.

5. E. *elongatum*, caule simplici, foliis oblongis, pedunculo terminali elongato, spica laxa, lamina labelli dentato-ciliato. *Willden. sp. pl.* 4, *p.* 120. *Botan. magaz.* 611.
Nat. of the West Indies. ♃.

6. E. *umbellatum*, caule simplici, foliis oblongis subemarginatis, floribus in sinu folii terminalis confertis, lamina [219 labelli triloba: lobo intermedio emarginato. *Willden. sp. pl.* 4, *p.* 117.
Nat. of Jamaica. ♃.

7. E. *nutans*, caule simplici, foliis ovato-lanceolatis amplexicaulibus, floribus suspicatis nutantibus, lamina labelli triloba: lobo intermedio tridentato. *Willden. sp. pl.* 4, *p.* 117.
Nat. of Jamaica. *Arthur Broughton*, M.D. ♃.

8. E. *conopseum*, caule simplici, floribus spicatis erectis, lamina labelli triloba: medio retuso, petalis interioribus angustioribus, foliis lanceolatis.
Nat. of Florida. Mr. *William Bartram.* ♃.

9. E. *ciliare*, caule simplici, foliis binis oblongis aveniis, lamina labelli tripartita: lacinia intermedia lineari. *Willden. sp. pl.* 4, *p.* 119. *Botan. magaz.* 463. *Redouté liliac.* 82.
Nat. of the West Indies. ♃.

VANILLA (*Swartz in nov. act. upsal.* 6, *p.* 66.) *Brown mss.*

Cor. cum germine articulata decidua! *Labellum* inferne

220] columna connatum. *Massæ pollinis* granulosæ. *Capsula* carnosa. *Semina* globosa aptera.

1. V. *aromatica*, foliis ovato-oblongis nervosis, petalis undulatis, labello acuto, capsulis cylindraceis longissimis.
Vanilla aromatica. *Willden. sp. pl.* 4, *p.* 121.
Vanilla flore viridi et albo, fructu nigricante. *Plum. ic.* 183, *t.* 188.
Nat. of South America. ♄.

2. V. *planifolia*, foliis oblongo-lanceolatis planis obsolete striatis, labello retuso.
Vanilla planifolia. *Andrews's reposit.* 538.
Myrobroma fragrans. *Salisb. paradis.* 82.
Nat. of the West Indies. ♃.

DIANDRIA.

CYPRIPEDIUM. (*Swartz in act. stockholm.* 1800, *p.* 250.) *Brown mss.*

Labellum ventricosum, inflatum (nunc saccatum). *Columna* postice terminata lobo petaloideo (stamine sterili), antheras distinguente. *Petala* 2 *antica* sæpius connata.

1. C. *Calceolus*, caule folioso, lobo columnæ elliptico obtuso, labello petalis breviore compresso. *Willden. sp. pl.* 4, *p.* 142. *Engl. bot.* 1. *Fl. dan.* 999. *Redouté liliac.* 19.
Nat. of England. ♃.

221] 2. C. *parviflorum*, caule folioso, lobo columnæ triangulari acuto, labello petalis breviore compresso. *Willden. sp. pl.* 4, *p.* 143.
Cypripedium parviflorum. *Botan. magaz.* 911.
Nat. of North America. ♃.

3. C. *pubescens*, caule folioso, lobo styli triangulari-ob-

longo-obtuso, labello petalis breviore compresso. *Willden. sp. pl.* 4, *p.* 143.

Cypripedium pubescens. *Willden. hort. berolin.* 13.
Cypripedium flavescens. *Redouté liliac.* 20.
Nat. of North America. ♃.

4. C. *spectabile*, caule folioso, lobo styli elliptico cordato obtuso, labello petalis obtusis longiore antice fisso. *Willden. sp. pl.* 4, *p.* 143.

Cypripedium album. *Curtis magaz.* 216. *Schnevoogt ic.* 2.
Nat. of North America. ♃.

5. C. *humile*, scapo aphyllo unifloro, foliis radicalibus geminis oblongis obtusis, lobo columnæ subrotundo-rhombeo acuminato deflexo, labello petalis lanceolatis longiore antice fisso. *Willden. sp. pl.* 4, *p.* 144.

Cypripedium acaule. *Curtis magaz.* 192.
Nat. of North America. ♃.

6. C. *arietinum*, corollis pentapetalis, labello saccato- [222
calcarato, caule folioso.
Nat. of North America. ♃.

GENERA ET SPECIES

PLANTARUM E VARIIS FAMILIIS,

QUÆ

IN HORTO KEWENSI COLUNTUR.

[*Extracted from 'Hortus Kewensis,' 2nd Edition, Vol. III, IV, & V.*]

LONDON.

1811—1813.

PLANTÆ VARIÆ HORTI KEWENSIS.

ANISOMELES. *Brown prodr.* 503. [iii. 364

Cal. 5-fidus. *Cor.* labium superius abbreviatum, integrum; inferius trifidum: lacinia media biloba. *Stam.* exserta, approximata: *Antheræ breviorum* biloculares, lobis parallelis; *longiorum* dimidiatæ v. dissimiles.

1. A. *ovata,* foliis ovatis subcordatis crenatis, verticillis multifloris, bracteis linearibus, calcycibus pilosis: glandulis inconspicuis.

Nepeta indica. *Linn. sp. pl.* 799 (exclusis synonymis). *Willden. sp. pl.* 3, *p.* 57.

Ballota disticha. [*Hort. Kew.*] *Edit. prior.* 2, p. 304. *Linn. mant.* 83?

Marrubium odoratissimum betonicæ folio. *Burm. zeyl.* 153, *t.* 71, *f.* 1.

Nat. of the East Indies. ⊙.

PYCNANTHEMUM. *Michaux amer.* 2, *p.* 7. [iii. 376
Brachystemum. *Michaux amer.* 2, *p.* 5.

Cal. 5-fidus. *Cor.* labium inferius lacinia media longiore *Stam.* distantia: antherarum loculis parallelis. *Involucrum* capituli multibracteatum.

1. P. *incanum,* staminibus exsertis, foliis oblongo-ovatis acutis subserratis tomentosis, capitulis compositis: lateralibus pedunculatis.

Pycnanthemum incanum. *Michaux amer.* 2, *p.* 7.

Clinopodium incanum. *Willden. sp. pl.* 3, *p.* [132].

Clinopodium menthæ folio incanum et odoratum. *Dill. elth.* 87, *t.* 74, *f.* 85.
Nat. of North America. ♃.

iii. 377] 2. P. *aristatum,* staminibus exsertis, foliis lanceolatis, capitulis sessilibus, bracteis aristatis.
Pycnanthemum aristatum. *Michaux amer.* 2, *p.* 8, *t.* 33.
Nepeta virginica. *Willden. sp. pl.* 3, *p.* 56.
Nat. of North America. ♃.

3. P. *virginicum,* staminibus inclusis, foliis lanceolatis linearibusve integerrimis, capitulis subcorymbosis.
Brachystemum virginicum. *Michaux amer.* 2, *p.* 6.
Thymus virginicus. *Willden. sp. pl.* 3, *p.* 145.
Satureja virginiana, floribus in summitate. *Herm. parad.* 218, *cum tab.*
Nat. of North America. ♃.

CAPRARIA. *Gen. pl.* 1030.

iv. 46] 1. C. *biflora,* glabra, foliis alternis lanceolatis serratis, floribus geminis, calycis laciniis subulatis, corollæ fauce imberbi.
Capraria biflora. *Willden. sp. pl.* 3, *p.* 323. *Jacqu. amer.* 182, *t.* 115.
Nat. of South America. ♄.

2. C. *cuneata,* pilosa, foliis alternis rhombeo-cuneiformibus inciso-serratis, floribus geminis, calycis laciniis linearibus: pilis capitatis, corollæ fauce imberbi.
Erinus frutescens. *Mill. dict. ed.* 8.
Nat. of South America. ♄.

iv. 52] STEMODIA. *Gen. pl.* 1043.

Cal. 5-part. *Cor.* bilabiata. *Antheræ* lobis distantibus. *Caps.* bilocularis.

1. S. *parviflora,* procumbens ramosissima pubescens, foliis ternatis petiolatis ovatis crenatis.

Erinus verticillatus. *Mill. dict. ed.* 8.
Nat. of South America. ♄.

MAZUS. *Lour. cochinch.* 385. *Brown prodr.* 439. [iv. 53

Cal. 5-fid. campanulatus. *Cor.* ringens: labio superiore semibilobo; inferiore 3-fido, basi bigibboso. *Caps.* biloc. bivalvis: valvis integris, medio septiferis.

1. M. *rugosus*, racemo laxo caulem paucifolium superante, calycibus pubescentibus: fructiferis auctis.
Mazus rugosus. *Lour. cochinch.* 385.
Lindernia japonica. *Willden. sp. pl.* 3, *p.* 326.
Nat. of China and Japan. ⊙.

CROSSANDRA. *Salisb. paradis.* 12. *Brown prodr.* 475, in obs. [iv. 54

Cal. 5-part. inæqualis. *Cor.* unilabiata. *Stam.* inclusa: *Antheris* unilocularibus. *Caps.* biloc. bivalvis: dissepimento contrario. *Semina* retinaculis subtensa.

1. Crossandra *undulæfolia.* *Salisb. paradis.* 12.
Ruellia infundibuliformis. *Andrews's reposit.* 542.
Justicia infundibuliformis. *Willden. sp. pl.* 1, *p.* 99.
Nat. of the East Indies. ♄.

APHELANDRA. *Brown prodr.* 475, in obs. [iv. 55

Cal. 5-part. inæqualis. *Cor.* bilabiata. *Antheræ* uniloculares! *Caps.* biloc. bivalvis: dissepimento contrario. *Semina* retinaculis subtensa.

1. A. *cristata,* foliis ellipticis oblongisve acuminatis, spicis tetragonis, bracteis ovatis integerrimis, corollis glabris.
Justicia cristata. *Jacqu. hort. schœnbr.* 3, *p.* 38, *t.* 320.
Justicia pulcherrima. *Willden. sp. pl.* 1, *p.* 86.
Justicia tetragona. *Willden. sp. pl.* 1, *p.* 85.

Justicia arborea. *Mill. dict. ed.* 8.
Ruellia cristata. *Andrews's reposit.* 506.
Nat. of the West Indies. ♄.

BLECHUM. *Brown prodr.* 478, in obs. Blechi species. *Jussieu in annales du mus.* 9, *p.* 269.

Cal. 5-part. æqualis. *Cor.* infundibuliformis. *Caps.* subbilocularis, bivalvis: dissepimenti contrarii segmentis demum liberis. *Semina* plura, retinaculis subtensa.

1. B. *Brownei*, foliis ovato-ellipticis subdentatis, spicis tetragonis, bracteis ovatis pubescentibus.
Blechum Brownei. *Jussieu in annales du mus.* 9, *p.* 270.
Ruellia Blechum. *Willden. sp. pl.* 3, *p.* 362.
Prunella elatior, flore albo. *Sloan. jam.* 1, *p.* 173, *t.* 109, *f.* 1.
Nat. of the West Indies. ♃.

iv. 61] BONTIA. *Brown prodr.* 517, in obs.

Cal. 5-part. *Cor.* ringens: labio superiore emarginato; inferiore trifido. *Stigma* bilobum. *Drupa* putamine biloculari: loculis bipartitis 4-spermis.

1. Bontia *daphnoides.* *Willden. sp. pl.* 3, *p.* 394.
Bontia laureolæ facie. *Dill. elth.* 57, *t.* 49, *f.* 57.
Nat. of the West Indies. ♄.

iv. 62] VOLKAMERIA. *Gen. pl.* 1056.

Cal. 5-fidus. *Cor.* tubo cylindrico; limbo 5-part. laciniis æqualibus subsecundis. *Stam.* exserta adscendentia. *Bacca* dipyrena: ossiculis bilocularibus.

1. Volkameria *aculeata.*
Volkameria aculeata. *Willden. sp. pl.* 3, *p.* 383.

Clerodendrum fruticosum spinosum, foliis inferioribus confertis, superioribus oppositis; pedunculis tripartitis trifloris alaribus. *Brown jam.* 262, *t.* 20, *f.* 2.
Nat. of the West Indies. ♄.
Obs. Genus vix distinctum a Clerodendro.

CLERODENDRUM. *Brown prodr.* 510.

Cal. 5-fid. (nunc 5-dent.) *Cor.* tubo cylindrico; limbo [iv. 63 5-partito patenti laciniis subæqualibus. *Stam.* juxta faucem inserta, exserta, adscendentia: antherarum loculis parallelis. *Bacca* pyrenis 4 monospermis.

1. C. *fragrans,* tomentosum, foliis subcordatis dentatis basi glandulosis, corymbis terminalibus densis hemisphæricis. *Venten. malmais.* 70 (floribus simplicibus.)
Volkmannia japonica. *Jacqu. hort. schœnbr.* 3, *p.* 48, *t.* 338 (floribus plenis).
Nat. of Japan and China. ♄

2. C. *viscosum,* tomentosum, foliis cordatis dentatis, corymbo terminali paniculato, calycibus viscosis laxis dimidio tubi corollæ longioribus.
Clerodendrum viscosum. *Venten. malmais.* 25.
Peragu. *Rheed. mal.* 2, *p.* 41, *t.* 25.
Nat. of the East Indies. *William Roxburgh,* M.D. ♄.

3. C. *squamatum,* foliis cordatis denticulatis subtus squamatis, panicula terminali divaricata, pedunculis calycibusque coloratis glabris, staminibus corolla tota longioribus.
Clerodendrum squamatum. *Willden. sp. pl.* 3, *p.* 385.
Volkameria Kæmpferi. *Willden. sp. pl.* 3, *p.* 385.
Volkameria Kæmpferiana. *Jacqu. ic.* 3, *t.* 500.
Nat. of China and Japan. ♄.

4. C. *paniculatum,* foliis cordatis quinquelobis subdenticulatis glabris; summis sæpius indivisis, panicula iv. 64] brachiata, corollæ tubo calycem multoties superante.

Clerodendrum paniculatum. *Willden. sp. pl.* 3, *p.* 388.
Clerodendrum pyramidale. *Andrews's reposit.* 628.
Nat. of Java and Pulo Pinang. ♄

5. C. *tomentosum*, foliis ellipticis acutis integris, calycibusque tomentosis: fructiferis auctis incrassatis coloratis, corymbis congestis. *Brown prodr.* 510. *Andrews's reposit.* 607.
Volkameria tomentosa. *Venten. malmais.* 84?
Nat. of New South Wales. ♄.

6. C. *ligustrinum*, foliis elliptico-lanceolatis integerrimis, petiolis pedunculis calycibusque (5-fidis) hirsutis, corymbis axillaribus, corollæ tubo limbum vix æquante.
Volkameria ligustrina. *Willden. sp. pl.* 3, *p.* 383. *Jacqu. collect. suppl.* 117, *t.* 5, *f.* 1.
Nat. of the Island of Mauritius. ♄.

7. C. *heterophyllum*, foliis lanceolatis lineari-lanceolatisve integerrimis glaberrimis, corymbis axillaribus terminalibusque, calycibus 5-dentatis pedunculisque glabris, corollæ tubo limbum vix æquante.
Volkameria heterophylla. *Poiret in encycl. botan.* 8, p. 687.
Volkameria angustifolia. *Andrews's reposit.* 554.
Nat. of the Island of Mauritius. ♄

iv. 65] 8. C. *inerme*, foliis ovatis ovalibusve integerrimis calycibusque (5-dentatis) glabris, corymbis axillaribus, corollæ tubo limbum aliquoties superante. *Brown prodr.* 514.
Volkameria inermis. *Willden. sp. pl.* 3, *p.* 383. *Jacqu. collect. suppl.* 117, *t.* 4, *f.* 1.
Nat. of the East Indies. ♄.

9. C. *Siphonanthus*, foliis verticillatis elongato-lanceolatis integris glabris, corymbis axillaribus paucifloris, corollis longissimis.
Siphonanthus indica. *Willden. sp. pl.* 1, *p.* 606.

Siphonanthus angustifolia. *Willden. sp. pl.* 1, *p.* 606.
Ovieda mitis. *Willden. sp. pl.* 3, *p.* 382. *Burm. ind.* 136, *t.* 43, *f.* 1.
Nat. of the East Indies. *William Roxburgh*, M.D. ♄.

MELHANIA. *Forsk. descr.* 64. [iv. 146

Cal. duplex: exterior 3-phyllus (nunc caducus). *Cor.* 5-petala. *Filamenta* 5 alterna sterilia. *Capsula* 5-locul. polysperma: dissepimentis contrariis.

1. M. *Erythroxylon*, calyce exteriore caduco; interiore intus sericeo petalis dimidio breviore, foliis cordatis crenato-repandis: subtus reticulatis tomentosis.
Pentapetes Erythroxylon. [*Hort. Kew.*] *Edit. prior* 2, *p.* 438.
Dombeya Erythroxylon. *Willden. sp. pl.* 3, *p.* 725. *Botan. Magaz.* 1000.
Nat. of the Island of St. Helena. ♄.

2. M. *Melanoxylon*, calyce exteriore caduco; interiore intus glabro petalis parum breviore, foliis cordatis integerrimis utrinque tomentosis lævibus.
Alcea arbor populnea fronde tota argentea quinque-capsularis, seu Ebenus viridis. *Pluk. mant.* 6, *t.* 333, *f.* 5.
Nat. of the Island of St. Helena. ♄.

ABROMA. *Gen. pl.* 1217. [iv. 409

Cal. 5-part. *Petala* 5 unguibus dilatatis saccatis. *Staminum urceolus* 10-fidus: laciniis 3-antheriferis; 5 alternis petaloideis. *Styli* 5. *Caps.* 3-loc. 5-alata, polysperma.

1. A. *augusta*, ramis tomentosis lævibus, foliis adultis subtus pube simplicissima, capsulæ alis apice truncatis: angulo exteriore acutiusculo.
Abroma augusta. *Willden. sp. pl.* 3, *p.* 1424.
Abroma Wheleri. *Willden. sp. pl.* 3, *p.* 1425.
Abroma fastuosum. *Jacqu. hort. vindob.* 3, *p.* 3, *t.* 1.
Nat. of the East Indies. ♄.

2. A. *fastuosa*, ramis muricatis, foliis adultis subtus pube simplici et stellari, capsulæ alis apice subtruncatis: angulo exteriore elongato-acuminato. *Brown mss.*

Abroma fastuosum. *Salisb. paradis.* 102.

Nat. of New South Wales and the Moluccas. ♄.

v. 529]

TRICHOMANES. *Gen. pl.* 1635.

Sorus marginalis receptaculo columnari sæpius setiformi insertus. *Indusium* urceolato-campanulatum monophyllum erectum sorum includens.

1. T. *brevisetum*, frondibus 2—4-pinnatifidis glabris: pinnulis unifloris: laciniis linearibus margine integerrimis, involucris turbinato-oblongis apteris: apice simplici indiviso, columella subinclusa, stipite alata. *Brown mss.*

Hymenophyllum alatum. *Willden. sp. pl.* 5, *p.* 526. *Engl. bot.* 1417.

Nat. of Britain. ♃.

EXTRACTS

FROM

DR. RICHARDSON'S

BOTANICAL APPENDIX

TO THE

"NARRATIVE OF A JOURNEY TO THE SHORES OF THE POLAR SEA.

BY

CAPTAIN FRANKLIN."

AND

ADDENDA

BY

ROBERT BROWN, F.R.S.

[*Pp*. 729—768.]

LONDON.

1823.

PLANTS FROM THE

APPENDIX

TO

CAPTAIN FRANKLIN'S NARRATIVE.

[“In drawing up the list, imperfect as it is, I have received [1 much assistance from able botanists. To Mr. Brown I am under the greatest obligations, not only for the liberal use of the Herbarium and Library, which, so happily for science, have been placed in his possession; but also for the friendly manner in which he aided my researches, and condescended to solve the doubts so frequently presenting themselves to one little versant in these pursuits. In addition to this general assistance, he kindly superintended the botanical drawings, and has enriched my catalogue with the lists of the Cyperoideæ (including the Carices), the Gramineæ, Junci, and Filices, and, with the accounts of the genera Eutoca, Heuchera, and Cryptogramma.”—Dr. Richardson.]

12. Eleocharis palustris, *Roem. et Sch. Syst.* ii, [2
p. 151. Scirpus palustris, *Willd.* i, *p.* 291. *Pursh,* i, *p.* 54. (W.)[1]

13. Scirpus cœspitosus, *Willd.* i, *p.* 292. (W.B.)[2]

14. S. lacustris, *Willd.* i, *p.* 296. *Pursh,* i, *p.* 56. (W.)

15. S. maritimus, *Willd.* i, *p.* 306. (W.)

---

[1] W. denotes the wooded country from latitude 54° to 64° north.—*Richardson.*

[2] B. denotes the barren grounds from lat. 64° to the Arctic Sea, in lat. 69°.—*Richardson.*

16. S. SYLVATICUS, *Willd.* i, *p.* 307. *Pursh,* i, *p.* 56. (W.)

17. ERIOPHORUM VAGINATUM, *Willd.* i, *p.* 312. (W.B.)

18. E. ANGUSTIFOLIUM, *Willd.* i, *p.* 313. *Pursh,* i, *p.* 58. (W.B.)

3] 19. E. STRICTUM, spicis pedunculatis involucro brevioribus, squamis acutiusculis tenuissimè ciliatis, foliis strictis planis apice triquetro, culmo teretiusculo. *Brown MS.* (W.)

Obs. Dubia species E. tenello (*Nutt.*) proxima. *Brown.*

20. ALOPECURUS ALPINUS, *Smith. Fl. Brit.* iii, *p.* 1386. *Brown, Suppl. Parry's Voyage,* No. 54. (B.)

21. A. ARISTULATUS, *Mich. Am.* i, *p.* 43? A. subaristatus: *Pers. Ench.* i, *p.* 80. *Pursh,* i, *p.* 66. (W.)

22. AGROSTIS LAXIFLORA, Trichodium laxiflorum, *Mich. Am.* i, *p.* 42, *t.* 8. *Pursh,* i, *p.* 61. (W.)

23. STIPA CANADENSIS, *Poiret, Encyclop. Bot.* vii, *p.* 452. *Pursh,* i, *p.* 72. Stipa juncea, *Mich. Am.* i, *p.* 54. Oryzopsis parviflora, *Nuttall* (fide Nutt. ipso). (W.)

24. ORYZOPSIS ASPERIFOLIA, *Mich. Am.* i, *p.* 51, *t.* 9. *Pursh,* i, *p.* 60. (W.)

25. CALAMAGROSTIS CANADENSIS, *Nuttall, Gen. Amer. Pl.* i, *p.* 46. Arundo Canadensis, *Mich.* i, *p.* 73. (W.)

26. C. STRICTA, Arundo stricta, *Schrad. Germ.* i, *p.* 215, *t.* 4, *f.* 5. *Smith, Compend. Fl. Brit. p.* 20. *Eng. Bot. t.* 2160. (W.)

27. C. PURPURASCENS, panicula spicata, glumis glabris, perianthii valvula inferiore scabra: apice 4-dentato; dorso aristata, rudimento plumoso villis baseos duplò longiore. *Brown MS.* (B.)

28. AIRA AQUATICA, *Willd.* i, *p.* 376. (W.)

29. HIEROCHLOA FRAGRANS, *Roem. et Sch. Syst.* ii, *p.* 515. *Brown Suppl. Parry's Voy.* No. 66. Holcus alpinus, *Wahl. Fl. Lapp. p.* 31, *t.* 2. (B.)

31. TRISETUM SUBSPICATUM, *Brown Supp. Parry's Journ.* No. 65. Trisetum airoides, *Roem. et Sch. Syst.* ii, *p.* 666. AIRA subspicata, *Willd.* i, *p.* 377. (W.B.)

32. AVENA STRIATA, *Mich. Am.* i, *p.* 73. *Pursh,* i, *p.* 86. (W.)

33. Beckmannia erucæformis, *Roem. et Sch. Syst.* ii, *p.* 695. Cynosurus erucæformis, *Willd.* i. *p.* 412. (W.)

34. Poa crocata, *Pursh*, i, *p*. 80. (W.)

35. P. alpina, *Willd.* i, *p*. 386. *Pursh*, i, *p*. 79. (W.)

36. Festuca ovina, *Willd.* i, *p*. 419. (W.B.)

37. Bromus purgans, *Willd.* i, *p*. 431. *Pursh*, i, *p*. 85. (W.B.)

38. Hordeum jubatum, *Pursh*, i, *p*. 89. (W.)

39. Elymus canadensis, *Willd.* i, *p*. 468. *Pursh*, i, *p*. 89. (W.)

40. E. mollis, spica erecta villosa, locustis geminatis 4-5-floris brevè setigeris glumas setaceas superantibus. *Brown MS.* (W.)

111. Luzula campestris, *Decand. Flor. Franc.* iii, [11
p. 161. Juncus campestris, *Pursh*, i, *p*. 238. (B.)

112. L. melanocarpa, *Desvaux, Journ. de Botan.* i, *p*. 142, *t*. 5, *f*. 2. Juncus melanocarpus, *Pursh*, i, *p*. 238. (W.)

113. Juncus triglumis, *Willd.* ii, *p*. 216. (B.)

114. J. castaneus, *Smith, Fl. Brit.* i, *p*. 383. *Engl. Bot. t*. 900. (W.B.)

115. J. echinatus, *Muhl. Gram. Am. p*. 207? (W.)

116. J. affinis, foliis subulatis nodoso-articulatis, capitulis subpaniculatis paucifloris (3-5 floris), capsulis ovalibus calyce obtuso hexandro longioribus. *Brown MS.* (W.)

117. J. filiformis, *Pursh*, i, *p*. 236. (W.)

118. J. tenuis, *Willd.* ii, *p*. 214. J. bicornis, *Mich. Am.* i, *p*. 191. (W.)

119. J. glaucus, *Willd.* ii, *p*. 206. (W.B.)

363. Kobresia scirpina, *Willd.* iv, *p*. 205. (B.)

Carex. 1. *Spicis dioicis.*

364. C. dioica, *Willd.* iv, *p*. 207. (W.) [34

365. C. scirpoidea, *Mich. Am.* ii, *p*. 171. *Pursh*, i, *p*. 34. C. Wormskioldiana, *Hornemann, Fl. Dan. t*. 1528. (W.)

2. *Spica androgyna simplici, arista stricta (vel exserta vel inclusa).* [38

366. C. FILIFOLIA, *Nutt. Am.* ii, *p.* 204. (W.)

3. *Spica androgyna simplici mutica.*

367. C. AFFINIS, spica androgyna simplici superne mascula, stigmatibus tribus, squamis lanceolatis acutis muticis; infima aristata. *Brown MS.* (W.)

Obs. Proxima C. polytrichoidi. *Br.*

368. C. ATTENUATA, spica androgyna simplici: superne mascula densa: femineis paucioribus alternis, squamis omnibus obtusis. *Brown MS.* (B.)

4. *Spicis androgynis pedunculatis.*

369. C. MEDIA, spicis androgynis ternis brevissimè pedunculatis sessilibusve approximatis basi masculis, stigmatibus tribus, capsulis ovatis rostellatis glaberrimis squama ovata obtisiuscula longioribus. *Brown MS.*

Obs. Prope C. bicolorem. *Br.*

370. C. FULIGINOSA, *Stern. et Hoppe in Act. Soc. Bot. Ratisb.* i, *p.* 159, *t.* 3. (B.)

5. *Spicis androgynis sessilibus alternis.*

371. C. SCOPARIA, *Willd.* iv, *p.* 230. *Pursh*, i, *p.* 37. (W.)

372. C. LOLIACEA, *Willd.* iv, *p.* 237. (W.)

373. C. REMOTA, *Willd.* iv, *p.* 239. *Pursh*, i, *p.* 37. (W.)

6. *Spicis sexu distinctis, mascula solitaria, femineis subsessilibus scapo nudo bracteisque membranaceis vaginatis.*

374. C. RICHARDSONII, spica mascula pedunculata, femineis binis alternis subsessilibus exsertis multifloris, stigmatibus tribus, fructibus obtusis pubescentibus. *Brown MS.* (W.)

7. *Spicis sexu distinctis, mascula solitaria, femineis sessilibus s. incluse pedunculatis.*

375. C. CONCINNA, spica mascula sessili cylindracea, femineis ternis subsessilibus approximatis, bracteis semimembranaceis, stigmatibus 3, capsulis trigono-obovatis brevissimè rostellatis pubescentibus duplo ferè longioribus squamis obovatis, foliis caulinis superioribus abbreviatis. *Brown MS.* (W.B.)

Obs. Affinis C. marginatæ, quæ diversa spica mascula majori, femineis binis brevioribus, squamis obtusiusculis capsulam subæquantibus. *Br.*

376. C. VARIA, *Willd.* iv, *p.* 259. *Pursh*, i, *p.* 40. (W.)

377. C. COMPACTA, *Brown App. Ross's Voyage.* (B.)

Obs. Prope C. saxatilem. *Br.*

378. C. LUPULINA, *Willd.* iv, *p.* 266. *Pursh*, i, *p.* 41. (W.)

8. *Spicis sexu distinctis, mascula solitaria, femineis superioribus sessilibus vel inclusè pedunculatis, inferioribus pedunculatis.*

379. C. MUTICA, spica mascula squamis obtusis, femineis tribus distantibus subexserte pedunculatis erectis raris, stigmatibus binis, capsulis ovalibus muticis lævibus squama ovata mucronata longioribus, foliis bracteisque planis. [36 *Brown MS.* (W.)

380. C. OLIGOCARPA, *Willd.* iv, *p.* 279. *Pursh*, i, *p.* 41. (W.B.)

9. *Spicis sexu distinctis, mascula solitaria, femineis omnibus pedunculatis.*

381. C. CAPILLARIS, *Willd.* iv, *p.* 290. (W.)

382. C. LIMOSA, *Willd.* iv, *p.* 293. (W.)

383. C. PODOCARPA, spica mascula solitaria, femineis binis pendulis oblongis, stigmatibus tribus, fructibus ellipticis brevissimè rostellatis integris lævibus acheniisque pedicellatis, foliis caulinis inferioribus brevioribus lanceolatis. *Brown MS.* (B.)

10. *Spicis sexu distinctis masculis pluribus.*

384. C. PELLITA, *Willd.* iv, *p.* 302. *Pursh*, i, *p.* 44. (W.)

385. C. AMPULLACEA, *Willd.* iv, *p.* 308. (W.)

386. C. ARISTATA, spicis femineis ternis quaternisve cylindraceis distantibus brevè pedunculatis, stigmatibus 3, capsulis glaberrimis nervosis rostro longissimo alte bifido lævi: laciniis patentibus, squamis omnibus aristatis, foliis subtus vaginisque villosis. *Brown MS.* (W.)

Obs. Inter C. bullatam et lacustrem. *Br.*

424. EQUISETUM ARVENSE, *Willd.* v, *p.* 1. *Pursh*, ii, [38 *p.* 651. (W.)

425. E. SYLVATICUM, *Willd.* v, *p.* 3. *Pursh,* ii, *p.* 651. (W.)

426. E. UMBROSUM, *Willd.* v, *p.* 4? (W.)

Obs. Charactere specifico quadrat. Vaginæ glaucæ dentibus circiter 14 nigro-fuscis, marginibus hyalinis.

427. E. PALUSTRE, *Willd.* v, *p.* 5. *Pursh,* ii, *p.* 651. (B.)

428. E. VARIEGATUM, *Smith, Comp. Fl. Brit. p.* 154. *Eng. Bot. t.* 1987. (B.)

429. E. SCIRPOIDES, *Willd.* v, *p.* 7. *Pursh,* ii, *p.* 652. (W.)

430. LYCOPODIUM COMPLANATUM, *Willd.* v, *p.* 19. *Pursh,* ii, *p.* 652. (W.B.)

431. L. SELAGO, *Willd.* v, *p.* 49. *Eng. Bot. t.* 233. (W.B.)

432. L. DENDROIDEUM, *Willd.* v, *p.* 21. *Pursh,* ii, *p.* 653. (W.)

433. L. ANNOTINUM, *Willd.* v, *p.* 23. *Pursh,* ii, *p.* 653. (W.B.)

434. L. ALPINUM, *Willd.* v, *p.* 20. *Eng. Bot. t.* 234. (B.)

435. POLYPODIUM VULGARE, *Willd.* v, *p.* 172. *Pursh;* ii, *p.* 658. (W.)

436. P. DRYOPTERIS, *Willd.* v, *p.* 209. *Eng. Bot. t.* 616. (W.)

437. WOODSIA ILVENSIS, *Pursh,* ii, *p.* 660. Nephrodium rufidulum, *Mich. Am.* ii, *p.* 269, fide exempl. à D. Richard. (W.)

438. W. GLABELLA, frondibus (lanceolato-linearibus) pinnatis glaberrimis, pinnis triangularibus pinnatifidis: imis dilatatis: laciniis cuneiformibus, rachi nuda, stipite squamato. *Brown MS.* (W.)

439. ATHYRIUM FRAGILE, Aspidium fragile, *Willd.* v, *p.* 280. (W.)

440. NEPHRODIUM FRAGRANS, Aspidium fragrans, *Willd.* v, *p.* 253. (W.B.)

441. PTERIS GRACILIS, *Willd.* v, *p.* 376 ? ? *Pursh,* ii, *p.* 668 ? ? (W.)

Var. ? nana, fronde unguiculari, pinnis omnibus indivisis.

442. CRYPTOGRAMMA ACROSTICHOIDES, frondibus bipinnatifidis, sterilium pinnulis ovalibus crenatis; fertilium demum explanatis, soris linearibus discum totum occupantibus. *Brown, ad finem Catalogi* [*p.* 526]. (W.)

ADDENDA TO CAPTAIN FRANKLIN'S NARRATIVE.

EUTOCA. *Brown.*

SYST. LINN. Pentandria Monogynia, post Hydrophyllum.

CHAR. GEN. *Calyx* 5-partitus, persistens. *Corolla* subcampanulata: membranulæ tubi decem, per paria filamentis alternantes. *Stamina* exserta. *Stylus* bifidus. *Capsula* polysperma, unilocularis, bivalvis, valvis indivisis medio placentiferis.

ORD. NAT. Hydrophylleæ, *Brown in* (Prodr. Fl. Nov. Holl. 492) *Bot. Regist.* 242, post Phaceliam.

CHAR. GEN. *Calyx* quinquepartitus, sinubus edentulis. *Capsula* polysperma.

Herbæ *annuæ, pubescentes, eglandulosæ.* Folia *alterna, sæpius pinnatifida, nunc indivisa!* Racemi *terminales et quandoque e summis alis, secundi, ebracteati, novelli spiraliter revoluti.*

Obs. Ad hoc genus, a coordinatis (Hydrophyllo, Nemophila, Ellisia, Phacelia,) diversum ovulis placentæ singulæ numerosis (unde nomen), pertinent E. *Menziesii*, (erecta, foliis linearibus integerrimis nonnullis quandoque incisis, ovulis placentæ singulæ viginti pluribus,) quæ forsan Hydrophyllum lineare, *Pursh, Am.* 1, *p.* 134; et *E. parviflora* (diffusa, foliis pinnatifidis trifidisve; superioribus quandoque indivisis lanceolatis, ovulis placentæ singulæ 6—8,) quæ

Phacelia parviflora, *Pursh, Am.* i, *p.* 140. Polemonium dubium, *Linn.*

EUTOCA FRANKLINII, *Tab.* 27.[1]

Eutoca erecta, foliis pinnatifidis bipinnatifidisve, ovulis placentæ singulæ viginti pluribus.

Hab. Abundantly amongst trees that have been destroyed by fire, on the banks of the river Mississippi.

Herba annua, erecta, pubescens, 6-10-uncialis. *Radix* descendens subramosa. *Caulis* simplicissimus teres cavus, crassitiè pennæ columbinæ, fuscus, pilis acutis tenuibus patulis pubescens. *Folia* radicalia conferta, caulina alterna; omnia petiolata exstipulata pinnatifida (in plantis procerioribus bipinnatifida), circumscriptione lanceolata, laciniis lanceolatis integerrimis, inferioribus quandoque dentatis incisisve, plana utrinque viridia pilisque caulinis similibus pubescentia. *Petioli* foliis breviores super canaliculati basi parum dilatata semiamplexanti. *Spicæ* racemosæ breves secundæ, ebracteatæ, novellæ arcuato-recurvæ, approximatæ, terminales et e summis alis.

Calyx monophyllus, æqualis, quinquepartitus sinubus edentulis, foliaceus, persistens: *laciniæ* lineares acutiusculæ planæ, trinerviæ nervis lateralibus margini approximatis medio venoso, hirsutæ pilis acutis strictis marginalibus crebrioribus longioribusque.

Corolla monopetala, hypogyna, regularis, subcampanulata, calyce sesquilongior, glabra limbo extus pube rara conperso, cærulea immaculata, siccatione sæpius albescens, decidua. *Tubus* intus nervis 15, ternatim cum staminibus alternantibus, lateralibus ternationis singulæ infra medium auctis membranula lineari imberbi apice subtruncato medium fere tubi attingenti, basi ad ortum filamenti respondentis producta et cum eodem fere confluenti, versus nervum medium conniventi. *Faux* nuda. *Limbus* tubo brevior, 5 partitus, æqualis, patens, lobis subrotundis integerrimis planis, venosis venis anastomosantibus, æstivatione imbricatis gemma obtusa. *Stamina* 5, epipetala, æqualia, limbum corollæ paulò superantia. *Filamenta* prope basin tubi inserta cum limbi laciniis alternantia, filiformia, basi parum dilatata, pilosiuscula pilis longiusculis sparsis in ipsa dilatata basi crebrioribus, æstivatione induplicata. *Antheræ* ovali-oblongæ imberbes, incumbentes, basi semibifidæ lobis approximatis, loculis parallelo-contiguis medio longitudinaliter dehiscentibus. *Pollen* sphæricum simplex læve, in cumulo albicans.

---

[1] [*See note at vol.* i, *p.* 187.]

Pistillum altitudine staminum. *Ovarium* liberum, sessile ovatum pilosum, basi auctum disco annulari adnato, uniloculare, placentis duabus parietalibus semiseptiformibus cavitatem fere bipartientibus, polyspermis lateribus ovuliferis ventre plano nudiusculo: *ovulis* plurimis (30 pluribus) in singula placenta confertim nec utrinque seriatim affixis. *Stylus* 1, filiformis pilosiusculus, semibifidus, laciniis filiformibus æqualibus modice patentibus glabris. *Stigmata* obtusa papulosa ipsis apicibus laciniarum styli paulo crassiora.

Capsula calyce persistenti parum aucto cincta eoque paulò brevior, ovata modice ventricosa, pilosa, unilocularis, bivalvis, valvis indivisis medio placentiferis, placentis adnatis longitudine fere loculi, lateribus seminiferis ventre nudiusculo. *Semina* numerosa in singula placenta viginti plura maturescentia, parva, circumscriptione ovalia, trigona angulis anguste alatis, areolata fusca, nucleo ovali.

TABULÆ 27 EXPLICATIO.

Eutoca Franklinii, magnitudine naturali cum foliis duobus separatis, quorum alterum bipinnatifidum ad procerius, alterum ad nanum exemplar pertinet.

Sequentes omnes ad lentem auctæ.

a. ejusdem. Calyx apertus cum Pistillo.

b. ——— Corolla aperta exhibens paria quinque membranularum tubi et Stamina cum iisdem alternantia.

c. ——— Anthera cum portione filamenti.

d. ——— Ovarii sectio transversalis, exhibens placentas duas parietales polyspermas.

e. Capsula haud penitus matura.
f. Capsulæ sectio transversalis.
g. ——— Semen.

1. EUTOCÆ MENZIESII, Capsula matura aperta. 2. Ejusdem Capsulæ valvula altera, exhibens placentam seminibus denudatam. 3. Ejusdem Semen. 4. Idem testa remota. 5. Sectio longitudinalis Albuminis Embryonem ostendens.

HEUCHERA, *Linn.*

Pentandria Digynia. *Flores pentapetali, superi, capsulares,* cum Vahlia.

CHAR. GEN. *Caps.* unilocularis, placentis 2 parietalibus adnatis polyspermis. *Calyx* 5-fidus (nunc inæqualis), æstivatione imbricata.

ORD. NAT. Saxifrageæ inter Tellimam et Vahliam.

CHAR. GEN. *Calyx* 5-fidus, æstivatione imbricata. *Petala* indivisa. *Stamina* 5. *Ovarium* uniloculare, placentis duabus adnatis polyspermis. *Styli* 2. *Capsula* semi-infera, flore emarcido coronata, birostris, inter rostra dehiscens.

Herbæ *perennes, sæpius acaules.* Folia radicalia *conferta, elongato-petiolata, cordata, sublobata lobis serrato-incisis;* stipulis *lateralibus infra adnatis apicibus distinctis:* caulina, *dum adsunt, alterna, minora, brevius petiolata.* Scapi *paniculati, pedunculis trifidis basi unibracteatis, divisuris bibracteatis.*

Obs. I. In ordine Saxifragearum locus Heucheræ est inter Mitellam gradifloram, *Pursh.* (Tellimam *nob.*) convenientem capsulæ unilocularis birostris dimidio supero flore persistente tecto, diversam staminibus decem, petalis laciniatis; et Vahliam, *Thunb.* (cujus certè species genuina est Oldenlandia pentandra, *Retz.* quæ Oldenlandia, *Smith in Rees, Cyclop.*) similem floribus pentandris, petalis indivisis, et capsulæ unilocularis dehiscentia, distinguendam placentis ab apice cavitatis pendulis solutis, æstivatione valvata calycis et habitu diversissimo.

Obs. II. A Saxifrageis transitus haud difficilis ad *Ribes* structura floris et ovarii admodum simile *Heucheræ,* diversum stylo semibifido, fructu baccato, albumine densiore, et habitu. Attamen vel in eadem prorsus familia cum Ribe includenda, vel in proximo ordine (Escalloneæ) disponenda Escallonia *Mutis.* (Stereoxylon *Ruiz et Pavon*) et nonnulla genera inedita Novæ Hollandiæ, nec non Anopterus, *Labill.* (*et Prodr. Fl. Nov. Holl.* 457) cujus petala distincta, calyci inserta et ovarii capsulæque basis adhærens. Sed Anopteri cum Saxifrageis affinitas mediante Heuchera in fructificatione saltem obvia, obstante quidem habitu omnino cum Escalloneis et non Cunoniaceis nec Saxifrageis conveniente.

HEUCHERA RICHARDSONII, *Tab.* 29.[1]

Heuchera calycis limbo inæquali obliquo.

Hab. On the rocky banks of rivers from lat. 54° to 64° north.

Desc. *Herba* acaulis, perennis. *Folia* radicalia conferta, elongato-petiolata, cordata, diametro sesqui-pollicari, semiseptemloba, lobo medio majore, omnibus inæqualiter serrato-incisis, super scabra subter lævia, secundum nervos venasque primarias pubescentia pilis brevissimis acutis, eglandulosa. *Petiolus* folio longior, triuncialis, pilosiusculus, scaber, antice canaliculatus. *Stipulæ* laterales infra adnatæ, apicibus lingulatis scariosis subciliatis. *Scapus* simplex, erectus, pedalis—sesquipedalis, gracilis, teres, striatus, pilosiusculus, dimidio inferiore pilis acutis divaricatis glandulisque intermixtis paucissimis, superiore pube brevissima glanduloso-capitata copiosa pilisque acutis rarioribus. *Panicula* laxe thyrsoidea, angusta, ramis alternis bractea lineari apice bi-trifido subtensis, trifidis pedicellis lateralibus 1-2-floris medio unifloro præcociore, divisuris singulis bibracteatis, bracteolis lineari subulatis glanduloso-pubescentibus.

Calyx monophyllus, campanulatus, irregularis, persistens, extus glandulis subsessilibus parvis copiosis tectus: *limbus* obliquus 5-fidus, laciniis obtusis obovatis magnitudine subæqualibus sed ob faucis obliquitatem altitudine inæqualibus, duabus altioribus paribus impari demissiori, omnibus quinquenerviis nervis venosis, æstivatione imbricatis duabus altioribus reliquas equitantibus.

---

[1] [*See note at vol.* i, *p.* 187.]

Petala 5, ipsis sinubus calycis inserta, unguiculata, indivisa, brevè ciliata, vix calycis lacinias superantia, persistentia, altiora lamina cuneato-obovata, demissiora sublanceolata, omnia trinervia nervis extus venosis, unguibus, angustis linearibus.

Stamina 5, summo tubo calycis inserta, ejusdem laciniis opposita, petala vix superantia, persistentia. *Filamenta* subulata, glabra, laciniis calycis altitudine proportionata. *Antheræ* incumbentes, brevè ovales, obtusæ, loculis parallelo-contiguis, longitudinaliter dehiscentibus. *Pollen* lateritium.

Pistillum: Ovarium semi-inferum, uniloculare, placentis duabus parietalibus longitudinaliter adnatis prominulis, cum stylis alternantibus, polyspermis: *ovulis* indefinite numerosis confertis superficiem ventralem lateraque placentæ operientibus. *Styli* duo, subulati, glabri, altitudine staminum. *Stigmata* obtusa imberbia, apicibus stylorum vix crassiora.

Capsula semi-infera, dimidio supero breviore calyce aucto persistente cum petalis vix emarcidis et filamentis sæpe antheris orbatis tecto, stylis rostrato, apice bilobo lobis intus dehiscentibus, unilocularis, placentis proportionatim auctis.

Semina numerosa, sessilia, ovalia, punctis elevatis acutis longitudinaliter seriatis aspera, altera extremitate obtusiore. *Testa* crasso-membranacea, fusca, facile separabilis. *Membrana interna* albumini arcte adhærens absque chalaza rapheve manifesta. *Albumen* semini conforme, album, carnosum, molle, oleosum. *Embryo* minutus, subovatus albus ad albuminis extremitatem obtusiorem situs. *Cotyledones* brevissimæ. *Radicula* processu capillari terminata, centrifuga.

TABULÆ 29 EXPLICATIO.

HEUCHERA RICHARDSONII, magnitudine naturali. i. basis dilatata petioli cum stipulis infra adnatis.

Figuræ sequentes ad lentem plus minus auctæ.

a. Flos plurimum auctus. *b*. Idem hinc longitudinaliter apertus. *c*. Ovarium longitudinaliter sectum, placentas parietales adnatas accurate, sed perperam stylos infra connatos, exhibens. *d*. idem transversè sectum. *e*. Capsula matura flore stylisque coronata, paulo tantum aucta. *f*. Ejusdem sectio transversalis. *g*. Semen plurimum auctum. *h*. Idem testa orbatum.

CRYPTOGRAMMA. *Brown*.

ORD. NAT. Filices. *Gyratæ* (*Polypodiaceæ*) inter Onocleam et Lomariam.

CHAR. GEN. *Sori* lineares (v. subrotundi) venulis costæ (pinnulæ) obliquis insidentes. *Capsulæ* pedicellatæ, receptaculo communi elevato nullo. *Involucrum commune* (pinnulæ) marginale, continuum, disco venoso, margine scarioso libero sæpius induplicato; *partiale* nullum.

Filiculæ *glabellæ*. Frondibus *cæspitosis bi-tripinnatifidis: centralibus mutato-contractis fertilibus, exterioribus sterilibus*. Involucris *dorsum totum pinnulæ tegentibus*. Capsulis *breve pedicellatis, annulo incompleto*. Sporulis *obtuse trigonis, lævibus*.

Obs. Typus generis est Cryptogramma acrostichoides, sed character constructus pro receptione Pteridis crispæ *auctor.* quæ dubia quidem species, ob soros abbreviatos potius subrotundos quam lineares, venulas terminantes sinum ferè involucri occupantes et cito confluentes, tunc æmulantes sorum linearem continuum costæ parallelum Pteridis, cum cujus speciebus pinnulis angustatis involucro omnino tectis, habitu benè satis convenit. C. acrostichoides habitu et sororum dispositione et forma Grammitidibus nonnullis præsertim G. leptophyllæ analoga, diversa frondibus fertilibus distinctis et præsentia involucri dorsum totum pinnulæ tegentis: His notis autem Cryptogramma convenit cum Pteridi thalictroidi *Swartz* (à nobis tredecem adhinc annis in *Prodr. Fl. Nov. Holl.* i. p. 154, uti genus distinctissimum indicata). In hoc genere, (Teleozoma *nob.*) Capsulæ sessiles, annulo completo latissimo, distinctæ in serie simplici insident venis costæ parallelis, utrinque vel solitariis marginalibus, vel binis altera superficiaria. Teleozoma insuper insigne est sporis in ordine naturali forsan, in tribu quantum scio maximis obtuse trigonis pulchre striatis, puncto unico opaciore.

CRYPTOGRAMMA ACROSTICHOIDES.

Cryptogramma, frondibus bipinnatifidis, sterilium pinnulis ovalibus crenatis; fertilium demum explanatis, soris linearibus discum totum occupantibus.

Hab. In shady rocky woods, between lat. 56° and 60° north. (First found by Mr. Menzies at Nootka Sound.)

Desc. *Filix* 4-8-uncialis, glabra, lætè virens, frondibus cæspitosis, stipitatis, crasso-membranaceis opacis venis vix adversus lucem conspicuis.

Frondes exteriores cæspitis *steriles*, circumscriptione lanceolatæ bipinnatifidæ apice pinnatæ pinnis distinctis alternis, brevissimè petiolatis; pinnulis confluentibus, ovalibus obtusis, crenatis, inferioribus passim dentatis, omnium venis e costa vix prominula acutangulis distinctis simplicibus bifidisve intra marginem crenaturæ desinentibus. *Stipites* pâllidi, subtus semiteretes anticè bisulci, infra medium conspersi squamulis lineari-lanceolatis acuminatis disco fusco-atro limbo pallido, supra glabri. *Rachis* epaleata, angusta, compressa, colore et fere substantia frondis. *Frondes* centrales *fertiles* stipite sterilium longiore alioqui simili insidentes bipinnatæ: pinnæ petiolatæ; *pinnulæ* omnes fructiferæ distinctæ inferiores brevissimè petiolatæ; ante explicationem involucri lineares, limbo utrinque recurvo efformante *involucrum* fornicatum discum totum operiens pallide viride venosum margine scarioso avenio sæpius induplicato: demum explanatæ angusto-oblongæ involucro quasi nullo: costa subtus particulis parvis flavis conspersa, venis costæ obliquis, altè bifidis fere bipartitis, distinctis.

Sori ramulos omnes venarum a basi fere ad apicem occupantes, lineares, distincti sed ita approximati ut discus totus pinnulæ explanatæ capsulis maturis tectus est, et in hoc stadio filix species Grammitidis vel Acrostichi quasi evadit.

Capsulæ brevè pedicellatæ, turgide lenticulares annulo incompleto, altero lateri infra annuli terminationem transversim dehiscentes, *receptaculo* communi elevato nullo sed venæ parum incrassatæ insidentes.

Sporulæ triangulares, læves, absque striis manifestis vel puncto opaciori, in cumulo dilutè flavæ separatim hyalinæ.

NAMES OF AND NOTES ON

INDIAN PLANTS.

BY

ROBERT BROWN, Esq., D.C.L., F.R.S., V.P.L.S., &c.

[*Extracted from 'A Numerical List of Dried Specimens of Plants in the East India Company's Museum, collected under the superintendence of Dr. Wallich.'*]

LONDON.

1828—1849.

NAMES OF AND NOTES ON

INDIAN PLANTS.

No.

184. For *Prionopteris* substitute *Matonia pectinata*, Brown (correction at p. 23).
286. *Polypodium Horsfieldii*, R. Brown MSS.
287. *Polypodium Wallichii*, R. Brown MSS.
293. Duæ species sub nomine *Polypodium propinquum*, Wall.; quar. altera *Polopod. melanopus* Brown MSS. (correction at p. 83).
815. *Abelia triflora*, Brown.
819. *Knoxia teres*, Br. MSS.
820. *Knoxia mollis*, Brown.
821. *Knoxia brachycarpa*, Brown.
826. *Spermacoce longicaulis*, Brown.
829. *Spermacoce ramosissima*, Brown.
832. *Spermacoce lasiocarpa*, Brown. *Sp. stricta*, Roxb. et Heyne vix Linn. (ex R. Br.).
833. *Spermacoce tenera*, Brown. *Sperm. ocymoides*, Heyne haud Burm. (MSS. Br.).
836. *Spermacoce tubularis*, Brown. *Sp. hirta*, Heyne haud Linnæi (MSS. Brownii).
838. *Hedyotis polycarpa*, Br.
840. *Hedyotis volubilis*, Brown. *H. scandens*, Wall. apud Roxb. (MSS. Br.).
842. *Hedyotis cephalophora*, Brown.
844. *Hedyotis congesta*, Br. β *longifolia*, Br.
846. *Hedyotis ? macrocephala*, Br.
847. *Hedyotis vestita*, Br.
848. *Hed. ? glabra*, Br.

No.

849. *Hedyotis costata*, Br.
852. *Hedyotis approximata*, Br.
853. *Hed. stylosa*, Br.
854. *Hedyotis articularis*, Br.
864. *Hedyotis? arguta*, Brown.
865. *Hedyotis? elongata*, Br.
867. *Hed. Heynii*, Br. *Oldenlandia herbacea*, Heyne et Roxb. haud Linn. (Brown).
868. *Hed. Burmanniana*, Br. *Oldenlandia biflora*, Roxb. haud Linn. (Brown).
869. *Hedyotis extensa*, Brown.
870. *Hedyotis linarifolia*, Brown.
873. *Hedyot. alsinifolia*, Brown.
874. *Hedyot. brachypoda*, Br.
875. *Hed. racemosa*, Lam. *H. alata*, Roxb. minimè Kœnigii (MSS. Brown).
876. *Hed. tubularis*, Brown.
879. *Hedyotis biflora*, Br. (haud Lam.) *Oldenlandia*, Linn.
881. *Hed. scapigera*, Brown.
884. *Hed. puberula*, Brown.
885. *Hedyot. cymosa*, Brown.
886. *Hedyot. glabella*, Brown.
6195. *Hedyotis stipulata*, Brown.
1915. *Bamia Abelmoschus*, Brown.
2170. *Hemionitis hastata*, Brown in Herb. Banks.
2702. *Helicia robusta*, Brown. Rhopalæ, No. 1038—1041, sunt species *Heliciæ* fide illustr. Brown in suppl. primo Prodr. Nov. Holl. p. 32.
3538. *Scleria macrocarpa*, Wall. *Ptychocarya*, illustr. R. Brown (gen. nov.).
3651. *Deutzia staminea*, Brown.
3652. *Deutzia corymbosa*, Brown.
3719. *Marlea begonifolia*, Roxb. *Stylidium*, *Lour.* ex illustr. R. Brown.
3764. *Sporobolus coromandelianus*, Br.
3765. *Sporobolus diander*, Br.[1]

---

[1] In a note on Sporobolus at the foot of p. 132 of his "List," Dr. Wallich

No.

3796. *Hierochloa laxa*, Br.
3807. *Michrochloa elongata*, Br.
3815. *Eleusine brevifolia*, Br.
4095. *Sonerila arguta*, Brown.
4098. *Sonerila tenera*, Brown.
4099. *Sonerila grandiflora*, Brown.
4361. *Canscora diffusa*, Brown.
4950. *Stauntonia latifolia*, Brown.
4951. *Stauntonia angustifolia*, Brown.
5225. *Podostemon Wallichii*, Brown.
5432. *Crotalaria Trifoliastrum*, Hb. Madr. Hæc et species sequentes (N. 5432—5437) ad *Cyrtolobum*, Brown; genus certè distinctum pertinent.
6049. *Podocarpus Horsfieldii*, Brown.
6098. *Nauclea Wallichiana*, Brown.
6104. *Uncaria elliptica*, Brown.
6112. *Uncaria ovata*, Brown.
6119. *Ixora propinqua*, Brown.
6134. *Ixora grandifolia*, Br.
6135. *Ixora lucida*, Brown.
6141. *Ixora opaca*, Br.
6146. *Ixora diversifolia*, Brown.
6147. *Ixora oblonga*, Brown.
6149. *Ixora concinna*, Brown.
6150. *Ixora densa*, Brown.
6151. *Ixora coriacea*, Brown.
6153. *Ixora elliptica*, Brown.
6154. *Ixora nigricans*, Br.
6157. *Ixora ? arguta*, Br.
6165. *Ixora macrophylla*, Brown.
6168. *Pavetta ? lucens*, Br.
6171. *Pavetta naucliflora*, Br.
6176. *Pavetta polyantha*, Br.

says: "Mr. Brown having undertaken the elaboration of the grasses, the specific names which are wanting will be supplied hereafter by that gentleman, who has had the goodness in the mean time to furnish this provisional list of the family." [As this intention was never carried out, those names only are quoted here which have Mr. Brown's authority specially attached to them.—Edit.]

No.
6179. *Pavetta mollis*, Br.
6181. *Pavetta canescens*, Br.
6182. *Pavetta weberæfolia*, Br.
6225. *Myrioneura* (R. Brown) *nutans*, Wall.
6228. *Ophiorrhiza bracteolata*, Brown.
6232. *Ophiorrhiza discolor*, Brown.
6239. *Spermadictyon suaveolens*, Br.
6890. *Allmania nodiflora*, Brown (*Chamissoa nodiflora*, Mart.)
6891. *Allmania albida*, Br. (*Chamissoa*, Mart.)
6892. *Allmania esculenta*, Br.
6950. *Axyris Moorcroftiana*, Brown.
7129. *Marlea barbata*, Brown.
7130. *Pisonia morindifolia*, Brown.
7131. *Cyrtandra ? lanuginosa*, Brown.
7246. *Balanophora dioica*, Brown.
7369. *Eulophia virens*, R. Br.
7414. *Bucklandia populnea*, Brown MSS. (Famil. *Hamamelidearum*, ex R. B.)
7415. *Bragantia Wallichii*, Brown MSS. (Fam. Aristolochiear. ex R. B.)
7417. Indeterminatus frutex, decumbens, fol. altern. simplicibus serratis, racemis amentaceis diclinibus (?) baccis monostylis. R. Brown.
7418. *Terminalia ?* (R. B.)
7419. *Myrtacea* (R. B.)
7421. Arbor indeterm. fol. alternis coriaceis glabris elongatis acuminatis integerrimis exstipulatis (R. B.)
7422. Arborea indeterminata macrophylla, inflorescentia axillari (R. Br.)
7423. Frutex indeterminatus alternifol. pilosus (R. B.)
7424. Frutex ramis virgatis, fol. alternis integerrimis oblongis nitidis lævibus stipulatis acumine brevi obtuso (R. B.)
7425. *Urticea* Trophidi accedens (R. B.)
7426. *Uvariæ* facie frutex oppositifolius (R. B.)
7427. *Grewia ?* (R. B.)

No.

7428. *Uvariæ* facie frutex sed stipulatus; folia alterna (R. B.)

7431. Frutex indeterminatus alternifolius, axillis nonnullis foliolis corrugatis inflorescentiam referentibus (R. B.)

7432. *Samydea* (R. B.)

7433. Indeterm. arborea fol. altern. simplicibus integerrimis impunctatis exstipulatis (R. B.)

7434. Indeterm. arborescens fol. alternis, integerrimis, magnis, pellucido-punctatis (R. B.)

7435. *Impatientis* habitu herba foliis immerse lineolatis (R. B.)

7436. *Oleinæ* quodammodo habitu frutex vel arbor (R. B.)

7437. Indet. arborescens fol. simplicibus alternis stipulatis impunctatis (R. B.)

7438. Indeterm. arborescens fol. simpl. alternis exstip. impunctatis (R. B.)

7439. Indeterm. frutex fol. altern. simpl. exstipulatis impunctatis pilosis (R. B.)

7440. *Chenopodiacearum* facie (R. B.)

7441. Indeterm. arborea fol. alternis simpl. longe petiolatis (R. B.)

7442. Indeterm. arborescens fol. altern. simpl. punctatis (R. B.)

7443. *Chailletiacearum* quodammodo facie arbor fol. simpl. altern. integerr. impunctatis pulchre reticulatis, cymis axillaribus (R. B.)

7444. Indet. arboresc. fol. simpl. subsessil. alternis argute dentatis, stipulis lateralibus spica axillari (R. B.)

7445. *Ammanniæ* facie planta fol. oppos. simpl. integerrimis (R. B.)

7446. Indet. arbor, fol. altern. simpl. elongato-petiolat., petiolo apice incrassato-tereti, stipulis subulatis, glomerulis axillaribus (R. B.)

7447. Indet. frutex fol. simpl. altern. subtus argenteis stipulatis, ramis tomentosis (R. B.)

No.

7448. *Celastrinea?* Arborea fol. alt. simplicib., stipulis minutis? flor. axillarib. subumbellat (R. B.)

7449. *Myrsinearum* familiæ arborea fol. simpl. subopp-pos. racemis laxis (R. B.)

7450. *Myrsinea?* Arborea priori similis (R. B.)

7451. Indeterm. arborea fol. simpl. altern. exstipulat. laurinis, fol. axillar. subcymos. parvis, duplici ordine trifidis, subvalvatis (R. B.)

7452. Indet. arborea, fol. altern. simpl. dentato-serratis impunctatis, gemmulis amentiformibus supra axillaribus (R. B.)

7453. *Samydearum* facie arbor, sed fol. impunctatis, stipulis falcatis deciduis (R. B.)

7454. *Elatines* facie plantula (R. B.)

7456. Indeterm. arborea, fol. simpl. alternis obovatis integerrimis coriaceis (R. B.)

7457. Indet. arborea fol. simpl. alternis (R. B.)

7458. *Samydea* ob fol. punctata, punctis passim linearibus (R. B.)

7459. Indeterm. arborea fol. pinnatis denticulatis, dentibus setigeris (R. B.)

7460. Indet. arborea fol. simpl. altern. coriac. integerrimis exstipulatis, gemmis axillaribus tomentosis (R. B.)

7461. *Maba?* (R. B.)

7462. Indet. arborescens resinifera, fol. oppositis simpl. integerr. oblongis acuminatis pellucido-punctatis, glomerulis axillaribus (R. B.)

7463. Indet. planta submersa litorea, conf. *Acorum maritimum,* König, MS. in Herb. Banks. (R. B.)

7464. *Cansjeræ* v. *Opiliæ* facie frutex alternifol. spicis axillaribus (R. B.)

7465. *Diplanthera,* Du Petit Thouars? Affinis *Cauliniæ ovali* (R. B.)

7466. Indeterm. frutex dichotomus, fol. simpl. altern., corymb. terminalib. laxiusculis (R. B.)

7467. *Rosacearum?* frutex icosandrus digynus (R. B.)

7468. Indeterm. frutex decumb. fol. altern. sim-

No.

plicib. remotè dentatis, spicis terminal. dichot. longiss. laxis (R. B.)

7469. *Aurantiaceus* frutex ramis aculeatis foliis ternatis (R. B.)

7470. Indet. frutex fol. altern. simpl. subpunctatis, petiolo ganglionoso, fructu pisiformi axillari fasciculato, loculis momospermis (R. B.)

7471. *Samydearum* habitu frutex fol. altern. simpl. stipulis deciduis, glomerulis axill. deciduis (R. B.)

7472. *Aurantiaceus* frutex inermis fol. ternatis inflorescentiâ terminali floribus parvis 4-5-fidis isostemonibus (R. B.)

7473. *Euonymus* (R. B.)

7474. *Viburnum* (R. B.)

7475. Indeterm. frutex, fol. altern. simpl. cymis lateralibus (R. B.)

7476. Indet. arborea fol. altern. simpl. serratis fructu libero piperis formâ et magnit. monostylo baccato oligospermo (R. B.)

7477. Indeterm. frutex fol. altern. simpl. dentat. fructu subracemoso 1-stylo calyce persist. suffulto (R. B.)

7480. Indet. frutex alternifol. fol. simpl. acuminat. integerr. exstipulatis, spicis axillaribus (R. B.)

7491. Garcinioides frutex (R. B.)

7495. *Cyrtandracearum* familiæ (R. B.)

7496. *Chrysobalaneus* frutex fol. alternis, racemis axillaribus, florib. icosandris, flor. lanatis (R. B.)

7497. *Sapindacea?* arborescens macrophylla fol. altern. pinnat. foliol. oblong. acuminat. spithamam longis, petiolis partialibus basi incrassatis, racemis abbreviatis, filamentis 5 lanatis (R. B.)

7498. *Hippocraticea* (R. Br.)

7499. *Brucea?* Arbor fol. altern. pinnat. nunc ternatis, foliol. lanceol. acuminatis marginatis, flor. cymosis, ligno amaro (R. B.)

7501. *Urticeæ* habitu, arborescens (R. B.)

7502. *Rhamnaceus?* frutex decumbens (R. B.)

No.

7503. *Elæodendri* facie arbor (R. B.)

7505. Indeterm. frutex decumbens, fol. oppositis subsessil. basi inæquali, stipulis interpetiolarib. amentis pisiformibus axillar. sessil. an merè foliaceis? (R. B.)

7506. Indeterm. frutex fol. altern. simpl. lanceol. obtusè acuminatis pellucido-punctatis, petiolis teretibus epidermide decidua rugosa, fructu semibivalvi monospermo (R. B.)

7508. Indeterm. arboresc. fol. altern. simplicib. petiolis apice incrassatis, pedunc. brevibus axillaribus multifloris (R. B.)

7509. Indet. frutex fol. altern. simpl. impunctatis exstipulatis (R. B.)

7510. *Olacinea?* fruticosa, fol. altern. simplicib. augustè lanceolat. (R. B.)

7511. Indeterm. fruticosa fol. altern. simplicibus stipulis foliaceis inciso-lobatis lateral. oppos. distinctis (R. B.)

7512. Indeterm. arborea fol. altern. subrotundis subtus tomento incanis, flor. glomeratis, perianthiis æstivatione valvatis (R. B.)

NOTES AND OBSERVATIONS

ON

INDIAN PLANTS.

BY

ROBERT BROWN, Esq., D.C.L., F.R.S., V.P.L.S., &c.

[*Extracted from 'Plantæ Asiaticæ Rariores,' by Nathaniel Wallich. M. and Ph. D., Vols. I and III.*]

LONDON.

1830—1832.

NOTES AND OBSERVATIONS

ON

INDIAN PLANTS.

Abelia. Brown apud Abel, in Itin. Chin. Append. B. p. 376. [i. 14

Calyx foliaceus 5- vel 2-partitus. Corolla subinfundibuliformis, 5-loba. Stamina 4, didyma vel subæqualia. Ovarium 3-loculare; loculis 2 polyspermis, abortientibus! tertio 1-spermo, fertili. Pericarpium 1-spermum, exsuccum, indehiscens, calycis limbo foliaceo aucto coronatum. *Brown MSS.*

Classis Linnæana, *Didynamia Angiosperma.* — *Brown loc. cit.*

Ordo naturalis, *Caprifoliaceæ veræ,* Brown; *Caprifoliacearum sectio* 1. Juss. Gen. p. 211, *Linnææ* prox.—*Brown.*

Habitus: Frutices. Folia opposita, petiolata, dentato-crenata vel integerrima. Inflorescentia varia.—*Brown.*

Abelia *triflora.* (Brown MSS.) Tab. 15.

Floribus corymbi congesti ternatis: lateralibus 3-bracteatis; calycibus 5-partitis; foliis ovato-lanceolatis, acuminatis integerrimis.—*Brown.*

This new species of *Abelia* has in its inflorescence [15 nearly the same relation to *Abelia Chinensis,* that *Caprifolium* has to *Xylosteum;* the central flower present in *A. triflora* and in *Caprifolium* being abstracted in *Xylosteum* and in *A. Chinensis.* In a third species (*Abelia uniflora*) sent from China by Mr. John Reeves, and for a

specimen of which I am indebted to the Horticultural Society, another modification of inflorescence occurs. The peduncles in this species have but one flower, which is considered as one of the lateral flowers, the ovarium being subtended by three bracts, placed exactly as in those of the corresponding flower of *Abelia triflora.*

Of the Natural Order *Caprifoliaceæ,* the only certain genera appear to me to be,—*Caprifolium, Xylosteum, Symphoricarpus, Linnæa, Abelia, Diervilla* (to which belongs *Weigelia* of Thunberg, who described the epigynous gland as the ovarium which he overlooked) *Triosteum,* and *Leysesteria* of Dr. Wallich. I am not acquainted, however, with any other character distinguishing them from the genera, which have hitherto been associated with them, except the very minute one of the raphe, or adnate portion of the funiculus umbilicalis being on the outer instead of the inner side of the ovulum.—*Brown MSS.*

16] MATONIA. (Brown MSS.)

SORI dorsales, rotundi, e puncto confluentiæ venularum plurium orti. INDUSIUM orbiculatum, peltatum. *Capsulæ* sessiles, in serie simplici circa receptaculum dispositæ.—*Brown.*

Ordo Naturalis, FILICES, tribus *Polypodiaceæ.—Brown.*

Habitus: Filix pulcherrima, lævis, fronde subbipinnatâ. Pinnæ plures hinc superiores, pauciores inde secundæ, omnes pinnatifidæ, lobis integerrimis, singulis basi, nunc utroque latere, nunc inferiore tantùm monosoris, rarò bisoris.—*Brown l. c.*

MATONIA PECTINATA. *Brown MSS.*

INDUSIUM depresso-sphæroideum, capsulas omninò includens, hemisphærio superiore crassiusculo, inferiore tenuissimo, membranaceo, capsulis arctè applicito, et mox subevanido. RECEPTACULUM parvum, paulò elevatum. CAPSULÆ annulo obliquè verticali incompleto cinctæ. SEMINA angulata.—*Brown MSS.*

The beautiful ramification of the veins, and their union, from which the sorus originates in *Matonia*, is not altogether peculiar to it. Among the genera of *Polypodiaceæ* having an indusium, one remarkable example occurs in a genus as yet undescribed (*Hypoderris*), which with an indusium not materially different from that of *Woodsia*, has exactly the habit of *Aspidium trifoliatum;* while of those genera of *Polypodiaceæ* which are without an indusium, the same kind of vascularity is found in an extensive and very natural section of *Polypodium*, to which *Polypodium phymatodes* and the greater number of those species *soris saccatis* belong.—*Brown*.

COMETES. (Burm. Flor. Ind. p. 39). [17

CALYX 5-partitus. PETALA nulla. STAMINA imo calyci inserta, ferè hypogyna, antherifera 5, infrà cum totidem sterilibus membranaceis in urceolum connata. ANTHERÆ 2-loculares. OVARIUM 1-spermum, ovulo adscendente funiculo e basi cavitatis orto. STYLUS 1. STIGMATA 3. PERICARPIUM: UTRICULUS calyce persistente inclusus, appendicibus setaceo-ramosis, post anthesin auctis et expansis involucratis. SEMEN adscendens, chalazâ laterali. ALBUMEN unilaterale. EMBRYO periphericus rectus; RADICULA infera.—*Brown MSS.*

Ordo Naturalis: Cum *Pterantho* Forsk. parvulum tribum efformat, hinc *Illecebreis* proximum, inde ad *Amaranthaceas veras* per *Desmochætam*, *Digeram*, et *Saltiam* Nob. hodiè (quæ Achyranthus papposa Forsk.) minùs arctè tamen accedens.—*Brown*.

Habitus: HERBAE (annuæ?) ramosæ oppositifoliæ. FOLIA integerrima, stipulis scariosis, subsetaceis, vel lateralibus liberis, vel basi cum petiolo connatis. PEDUNCULI e superioribus alis alterni, apice 3-flori. BRACTEÆ ternationis singulæ 6, quarum 2 oppositæ communes; reliquæ 4 per paria floribus lateralibus, intra communes pedicello brevissimo insidentibus, pertinentes, subulatæ: singulæ appendice (ramo mutato) axillari, setaceo-diviso, ramulis sub anthesi fasciculatim approximatis, florescentiâ peractâ auctis et patulis, subdivisionibus singulis bracteolâ subulatâ subtensis.—*Brown.*

COMETES SURATTENSIS. Burm. Tab. 17.

FOLIIS cuneato-obovatis, ellipticisve; ramulis lævibus; stipulis petiolaribus; fructus involucri ramulis fasciculatis, imis deflexis.—*Brown MSS.*

The genus Cometes, proposed by the younger Burmannus (in *Flora Indica,* p. 39), was adopted in *Mantissa prima* by Linnæus, whose generic character agrees in most respects with the short description of Burmannus, from which it was no doubt chiefly formed: as, however, it differs in some points, he probably had seen and slightly examined the original specimen, which Burmannus may have taken with him to Upsal, as it is known he carried there for Linnæus's determination many of his rarer unpublished plants. But Linnæus, in describing the fruit 18] of *Cometes* to be a "*capsula tricocca,*" must have presumed on the affinity which he erroneously supposed the genus to have to *Dalechampia.*

Burmannus's specimen of *Cometes surattensis* I have seen in his Herbarium, now in the possession of Baron Delessert. It corresponds tolerably with the figure in *Flora Indica,* which, notwithstanding some differences, was probably made from it.

When engaged in drawing up the catalogue of Mr. Salt's Abyssinian plants, it occurred to me that the genus which I have in that catalogue named *Saltia,* was at least nearly related to *Cometes;* but I had at that time no means of verifying my conjecture. I afterwards, however, requested M. Decandolle to examine the specimen in M. Delessert's Herbarium, and the result of that examination is given in a note attached to the specimen, written by M. Delessert in 1816, in which it is stated, on M. Decandolle's authority, to be a species of his genus *Desmochæta,* or *Pupalia* of Jussieu.

In September of the same year I examined the specimen, and left attached to it the following note, which refers to

M. Decandolle's opinion, as well as to the Abyssinian genus, which I had published:—"Non Desmochætæ sed Saltiæ species, vid. Catal. Pl. Abyssin. in Itin. D. Salt. Cometis nomen restituendum."—R. B.

M. Guillemin, in the *Dictionnaire Classique d'Histoire Naturelle*, tom. 4, p. 356, states that M. De Jussieu, who examined, or at least saw, the specimen in M. Delessert's Herbarium, recognised it to belong to *Amaranthaceæ*, and that M. Decandolle regarded it as a species of *Desmochæta*. M. Guillemin himself, in adopting M. Decandolle's opinion proposes to apply to that genus the older name *Cometes;* and he adds that in a manuscript note in Burmannus's specimen I have proposed to do the same thing. But from that note, which I have already given verbatim, it appears that my proposing to restore the name *Cometes* referred to *Saltia*, and not to *Desmochæta*, to which it was evident to me *Cometes* did not belong.

In the Linnean Herbarium the specimen named *Cometes*, I believe in the writing of the younger Linnæus, proves to be a plant belonging to *Convolvulaceæ*, and it is probably a species of *Convolvulus* or *Ipomæa*.

Burmannus (in *Flora Indica*) has given the specific name of *Surattensis* to his *Cometes*, and that name Linnæus has adopted in his first *Mantissa*. In the twelfth edition of the *Systema Naturæ* (vol. ii, p. 127), published in the same year, but subsequently to the *Mantissa*, he changed the specific name to *alterniflora*, no doubt derived from the account of the inflorescence given both by Burmannus and himself. It is, however, not a very apt name for a plant whose flowers are always in threes, though the common peduncles are generally alternate. I have therefore recurred to the original name.

Sir James Smith, in a (pencil) note on the specimen in the Linnean Herbarium, though aware that the specimen is not really *Cometes*, supposes the specific name last given by Linnæus to have been suggested by it. This might have been the fact had that name been *alternifolia*, which, when he wrote the note, I have no doubt he believed it to be; but the actual name *alterniflora* could not well be

suggested by this plant, which has its flowers in a capitulum. —*Brown's MSS.*

COMETES ABYSSINICA. (Brown MSS.) Tab. 18.

Foliis lineari-lanceolatis, mucronatis, pungentibus; stipulis liberis; ramulis pulvereo-pubescentibus, scabris; fructus involucri ramulis pinnatis, patulis.—*Brown MSS.*

Saltia abyssinica, Brown apud Salt, in Itin. Abyssin. Append. B. p. 376.

39] ABELMOSCHUS.

Calyx 5-dentatus, spathaceus, deciduus, cinctus *involucro* (*calyce exteriore*) 5—10-partito. Stigmata 5. Capsula 5-locularis, valvis medio septiferis, polysperma. Semina calva.—*Brown MSS.*

41] SPHÆROPTERIS.

Involucra dorsalia, e medio venulæ orto, pedicellata, sphærica, clausa, verticaliter dehiscentia, bivalvia. Capsulæ pedicellatæ, receptaculo communi convexo insidentes.—*Brown MSS.*

Habitus *Aspidii*, caudice nullo, frondibus decompositis, venulis subtùs glandulosis, stipite rachique paleaceis.—Genus nimìs forsan affine *Diacalpi*, Blume Enum. Plant. Javan. p. 241 (fide speciminis Javanici a Domino Horsfield anno 1818 communicati), quæ similis habitu, venulis glandulosis, medio soriferis, involucro sphærico, clauso, reticulato, areolis subrotundis, parietibus moniliformibus, nodulosisve; diversa involucro sessili, laceratim dehiscente, capsulis vix pedicellatis, et receptaculo obsoletiori insidentibus. Hoc ultimo charactere et reticulatione involucri a *Cyatheis* nonnullis (involucro e medio venæ orto) præsertim distinguenda; arctiore tamen affinitate nixa cum *Woodsia*, mediante specie mexicanâ (*W. mexicana* Nob.) quæ, ni fallor, *Physematium molle*, Kaulf. in Regensb. Bot. Zeit. 1829, 1 Band, p. 341, cui cel. auctor attribuit involucrum "circumcirca clausum" quod verò in nostra planta apice divisum est, lobis subciliatis, arctè conniventibus.—*Brown MSS.*

APOSTASIA. *Blume Bijdrag.* p. 423. [74

PERIANTHIUM limbo sexpartito, regulari. STAMINA antherifera 2, quorum FILAMENTA foliolis lateralibus interiorum perianthii opposita, infrà connata cum basi STYLI suprà cylindracei, et vel nudi, vel hinc FILAMENTO TERTIO castrato, altiùs adnato, foliolo antico exteriorum opposito, appendiculati. ANTHERÆ biloculares, longitudinaliter dehiscentes. POLLEN e granulis simplicibus, solutis. STIGMA obtusum, obsolete bi-trilobum. CAPSULA trilocularis, polysperma. SEMINA ovata, testâ nucleo conformi.—*Brown MSS.*

This very remarkable genus, founded on *Apostasia odorata,* was first published in 1825 by Dr. Blume in the work referred to; but in 1821 a nearly related species was discovered in the valley of Noakote in Nipal, by the plant collectors of Dr. Wallich, who, in his manuscripts, which I have had the advantage of consulting, named it *Mesodactylis deflexa,* and at the same time had the drawing made which is here given.

I have followed these two distinguished botanists in regarding *Apostasia* as belonging to, or at least as most nearly related to, *Orchideæ.* It exhibits, however, very few of those characters generally considered essential to that family of plants.

In its antheræ, pollen, style, and stigma (all which parts are so remarkably modified in *Orchideæ*), *Apostasia* does not materially differ, either in form, structure, or economy from the more regular-flowered families of *Monocotyledones;* and in its trilocular ovarium it is distinguished from all other genera of the order to which it is here appended.

On the other hand, it agrees with *Orchideæ* in the structure, as far as I am able to ascertain, of its minute seeds, in the reduced number of stamina, and probably, with some genera of the family, in the order of their reduction;

in the filaments being at base connate with the lower part of the style, and in a great degree in habit. In endeavouring to estimate the importance of the several points of resemblance and difference here enumerated, with a view to decide on the degree of relationship *Apostasia* bears to *Orchideæ*, it is necessary to consider the relative position of the parts of the flower in that order, and also in *Scitamineæ*, the family most nearly allied to it.

The relation of stamina to the parts of the floral envelope in *Apostasia* is in the first place to be determined. The two antheriferous filaments, which I have more particularly examined in the unexpanded flowers of *Apostasia nuda,* appear to be opposite to the two lateral segments of the inner series of the perianthium; and the sterile filament in *Apostasia Wallichii,* and, no doubt, also in *A. odorata,* is opposite to the anterior segment of its outer series.

Several years since, I advanced the opinion, "That in a complete flower, whose parts are definite, the number of stamina, and also of pistilla, is equal to that of the calyx and corolla united in *Dycotyledones,* and of both series of the perianthium in *Monocotyledones.*"[1]

It may be further observed that, in cases of reduction of pistilla, it is generally found that the remaining carpella, when more than one, but inferior in number to that of one series of the floral envelope, correspond in position with parts of both series, and, with very few exceptions, whether distinct or confluent, are all equally developed. Stamina, on the other hand, in cases of equal reduction, generally belong to one of the series only, or, if corresponding with parts of both series, are usually in different states of development, as they are here described to be in two species of *Apostasia.*

This appearance of part of the inner series of stamina has not hitherto been expressly remarked in *Orchideæ.* It is not improbable, however, that the same relation to perianthium exists in the lateral antheriferous stamina of

---

[1] *In* 1826, *in Appendix to 'Denham and Clapperton's Travels,' p.* 237 (*vol.* i, *p.* 293).

Cypripedium,[1] as well as in the sterile petaloid processes similarly situated in the other genera, as in *Diuris*. And the third stamen of the inner series, still more altered in form, may be considered as present in certain New Holland genera, especially *Glossodia*, where this supposed stamen is placed within the labellum, but entirely distinct from it; in *Epiblema*, *Pterostylis*, and *Chiloglottis*, in which an analogous appendage similarly situated coheres in various degrees with that division of the perianthium; and perhaps it may be considered as indicated in all cases where the labellum is furnished with a process, however minute, arising from its axis.

If the view here taken of the position of the lateral filaments in *Cypripedium* and *Diuris* be adopted, it may be remarked that indications or rudiments of the two stamina necessary to complete the order in *Orchideæ*, of those, namely, corresponding with the lateral segments of the outer series of the perianthium, have not yet been observed in the regular structure of any plant of the order. They have, however, been occasionally met with in monstrous flowers of *Habenaria bifolia*, in more than one spike of which I have found the greater number of flowers triandrous, the three antheræ being equidistant, and placed exactly opposite to the three divisions of the outer series of the perianthium, the inner series of which remains in its ordinary state.

M. Achille Richard[2] has given an account of an [75 analogous monstrosity in *Orchis latifolia*. In this case of a triandrous *Orchis*, M. Richard having adopted the opinion, which I believe I was the first to advance,[3] of the origin or nature of the auriculæ of the anthera of many genera of *Orchideæ*, considers the additional antheræ as formed by the perfect development of these auriculæ. This view, however, cannot be taken of the monstrosity of *Habenaria bifolia*, in which not only the auriculæ of the anterior or ordinary stamen are distinctly present, but two other similar processes, one on the anterior side of each of the additional antheræ, also exist; a fact which throws considerable doubt on the correctness of the view here referred to of the nature of these processes in *Orchideæ,* unless the same hypothesis could likewise be extended to all cases of trifid filaments, as those of *Allium* and *Deutzia,* to which the auriculæ in *Orchideæ* may be said to be analogous.

---

[1] '*Prod. Fl. Nov. Holl.*,' i, *p.* 309.

[2] '*Mém. de la Soc. d'Hist. Nat. de Paris*,' i, *p.* 202.

[3] '*Prod. Fl. Nov. Holl.*,' i, *pp.* 309 *&* 311.

In *Scitamineæ,* the family most nearly akin to *Orchideæ,* the complete number of stamina may be considered very generally present. Only one, however, is antheriferous; and this perfect stamen, instead of corresponding, as in *Orchideæ,* with the anterior segment of the outer series of the perianthium, is placed within the posterior segment of the inner series, the two remaining barren stamina of the same series being the epigynous glands or filaments existing in all the genera of this order except *Costus*;[1] while the outer series of stamina, very differently modified, form the innermost or supplementary series of the perianthium.

This view of the origin of that series was many years ago communicated to me in conversation by the celebrated Correa de Serra; but was first, I believe, published in 1826 by Professor Lestiboudois, in a memoir[2] in which the correctness of the opinion held, namely, that *Scitamineæ* and *Canneæ* possess rudiments or modifications of six stamina, is remarkably contrasted with the erroneous views taken, or rather adopted, of the greater part of the structures adduced in support of it.

A more accurate account of the relative position of parts was given in 1828 by my ingenious friend Professor Von Martius. In confirmation of the opinion, I may remark that the cells of the ovarium, whose relation to the floral envelope appears to be very uniform in *Monocotyledones,*[3] are in *Scitamineæ* opposite to the supposed petaliform stamina, and to the divisions of the outermost series of perianthium. I have formerly pointed out the difference in position of the antheriferous stamen in *Scitamineæ* and that of *Canneæ* or *Maranteæ*, and have remarked that this difference is in some degree analogous to that existing between *Cypripedium* and the other genera of *Orchideæ*.[1]

---

[1] '*Prod. Fl. Nov. Holl.*,' i, *p.* 305.

[2] '*Mémoire sur la Canna indica et sur les familles des Balisiers et des Bananiers.*'

[3] *Appendix to* '*Denham and Clapperton's Travels,*' *p.* 243 (*vol.* i, *p.* 300).

Apostasia in its trilocular ovarium differs from all the genera of *Orchideæ;* but an analogous difference occurs in *Scitamineæ*, in which *Globba* is distinguished from every other genus in having its ovarium unilocular, with three parietal placentæ. And in both these families it may be proved that the constituent parts of the compound ovarium, whether unilocular or trilocular, agree in position or in their relation to the divisions of the perianthium.

Lastly, *Apostasia*, in the economy of impregnation, or the state of the pollen, and the manner of its application to the stigma, probably differs essentially from all *Orchideæ*, except perhaps *Cypripedium* and possibly *Vanilla*. But a similar difference, and in a degree still more striking, exists between *Apocineæ*, as I have formerly proposed to limit that order, and *Asclepiadeæ*, which can only be regarded as a subdivision of the same natural class.—*Brown MSS.*

APOSTASIA WALLICHII, Brown MSS.

ANTHERARUM lobis posticis inæqualibus, filamento tertio castrato.—*Brown MSS.*

APOSTASIA ODORATA, Blume, Bijdr., p. 423. [76

ANTHERARUM lobis posticis æqualibus, filamento tertio castrato.—*Brown MSS.*

APOSTASIA NUDA, Brown MSS.

ANTHERARUM lobis posticis æqualibus, filamento tertio nullo.—*Brown MSS.*

---

[1] '*Gen. Remarks on Bot. of Terra Aust.*,' *p.* 43 (*vol.* i, *p.* 49).

iii. 17] HUMBOLDTIA.

CALYX bibracteatus, tubo turbinato, limbo quadripartito, lacinia postica (e duabus conflatâ) binervi. Petala 5 vel (suppressione inferiorum) 3. Stamina 5, omnia antherifera, distincta, fauci calycis inserta, ejusdemque laciniis opposita. Ovarium pluriovulatum, stipite tubo calycis hinc adnato. Stylus subulatus. Stigma capitatum. Legumen (oblongum, compressum, *Vahl*).—*Brown MSS.*

Frutices (vix arbores) inermes. Folia abruptè pinnata, subtùs glandulis nonnullis adpressis instructa. Stipulæ foliaceæ, persistentes, peltatim adnatæ, infra insertionem productæ in lobum transversim dilatatum, subtùs foliorum instar glandulosum, (in sicco saltem) sæpiùs reduplicatum stipulamque accessoriam exteriorem æmulantem. Racemi axillares, pedicellis bracteâ, præter duos calycinos, unicâ caducâ subtensis. Calycis limbus, æstivatione imbricatâ, deciduus, tubum persistentem superans. Filamenta æstivatione induplicata. Antheræ versatiles.—*Brown.*

18] *H. laurifolia,* Vahl; pentapetala, foliis 3—5 jugis; stipularum lobo postico hinc productiore, acuto; ramulorum internodiis superioribus incrassato-fistulosis.—*Brown.*

ii. 46] RATZEBURGIA PULCHERRIMA, Kunth.

Ratzeburgia, Kunth, Revis. Gramin., p. 487.—Spica articulata, rachi flexuosâ. Locustæ in singulo articulo 3. Duæ sessiles, per glumas superiores parallelo-contiguæ, bifloræ. Glumæ valvula inferior cartilaginea, dorso depresso nervoso scrobiculato, apice membranaceo bilobo; superior chartacea planiuscula lævis. Flosculi hyalini mutici; superior hermaphroditus univalvis enervis. Squamulæ hypogynæ 3, quarum duæ exteriores subcollaterales dilatato-cuneatæ retusæ bidentatæ; tertia interior triloba (pro palea superiore habita a Dom. Kunth). Stamina 3. Ovarium imberbe. Styli ad basin distincti, interjecto umbone. Stigmata coarctato-plumosa. Flosculus inferior neuter univalvis ob-

soletè binervis marginibus inflexis. Locusta tertia pedicello libero insidens, neutra, univalvis.—*Brown MSS.*

Gramen perpulchrum, humile, stoloniferum, glabriusculum. Culmi adscendentes, monostachyi. Folia brevia, rigidiuscula, plana, nunc conduplicata, obtusa, marginata, vaginâ compressâ, ligulâ imberbi, indivisâ.—*Brown.*

Obs. Ratzeburgia may be readily distinguished from all the other genera of *Paniceæ,* as I have defined that extensive tribe, in having at each joint of its rachis three locustæ, of which two are sessile, fertile, and without aristæ, while the third, which is merely rudimentary, consisting of a single valve, is supported on a pedicel entirely distinct from the rachis.

In most of these characters, indeed, it agrees with *Mnesithea* of Kunth (*Rottböllia perforata* of Roxburgh), which differs, however, in having the pedicel of its third still more imperfect locusta, connate at both extremities with the rachis, and thus contributing to form the perforated joints so remarkable in this genus. In *Mnesithea* M. Kunth considers the upper valve of the glume as belonging to a third univalvular neuter flosculus—an opinion which seems to be founded solely on its membranaceous texture, and which, if adopted, would exclude this genus from *Paniceæ,* as I have defined them, a definition which M. Kunth certainly does not adopt, as he has included in his tribe of *Rottbölliaceæ* several genera belonging to *Poaceæ,* namely, *Lepturus, Oropetium, Psilurus,* and *Nardus.*

According to the view here taken of the structure of the two genera, *Mnesithea* would have nearly the same relation to *Ratzeburgia* in its more important characters that *Rottböllia* has to *Ischæmum Rottböllioides,* 'Prodr. Flor. Nov. Holl.,' which I have in that work suggested might form a distinct genus. This genus has very recently been adopted by M. Brongniart, and named *Cœlorachis,* with a character, however, which, as far as regards the structure of the pedicelled locusta, is so limited as to exclude both *Ischæmum Rottböllioides,* whose pedicelled locusta contains an hermaphrodite and a neuter flower, and *Rottböllia Cœlorachis* of Forster, in which that locusta contains two male flowers

This last degree of development of the pedicelled locusta extends to other species, and such species differ from *Manisuris* merely in the form of the outer valve of the gluma of the sessile locusta.

Two other views, different from that here adopted, of the structure of *Ratzeburgia*, have been taken; the first by M. Kunth, who considers, and perhaps more correctly, the third squamula as the upper valve of the hermaphrodite flower. According to the second view, which is obviously suggested by the figure, the locusta would be regarded as containing one flower only.—*Brown.*

66] AIKINIA BRUNONIS, Wall.

FOLIIS petiolatis, pedunculis solitariis pluribusve seriatis. —*Brown.*

Habitat in rupibus subumbrosis prope Cœpang in insula Timor; lecta florida et fructifera initio Aprilis anno 1803. —*Brown.*

RADIX annua, fibrosa, brevissima. CAULIS teres, succulentus, tenuissimè pubescens pilis brevibus acutis; 2—4 pollicaris, sæpius parùm ramosus, nunc simplicissimus. FOLIA petiolata, cordata, subovata, obtusa, repando-dentata, dentibus brevissimis, subsesquiuncialia, inferiora alterna, terminalia quandoque subopposita; omnia super viridia, pilis brevibus acutis sparsis scabriuscula; subter lætè viridia, glabra, pube brevissimâ nervum venasque primarias pinnatas tantùm occupante. PETIOLI inferiores folia subæquantes, pilosiusculi, semiteretes. *Spicæ* unilaterales, circinatæ, racemosæ, demûm corymbosæ, pedunculatæ, rachi hinc (anticè) pedicellis confertis ebracteatis, florescentiâ peractâ sensim elongatis; indè (posticè) foliolio sessili, subrotundo, cucullato (*Commelinæ* ad instar) involucratâ. *Pedunculi* laterales solitarii, et terminales 2—4 collaterales, seriati inter folia duo subopposita, petiolata. CALYX liber, monyphyllus, tubulosus, pilosiusculus, viridis, semiquinquefidus, dentibus æqualibus, erectis, acutis, persistens, post anthesin parùm auctus limboque patente

subcampanulatus. *Corollæ* magnitudine et figurâ ferè *Erini; tubus* calyce paullò longior, albus; *faux* imberbis, angusta; *limbus* quinquefidus, bilabiatus, patens, cœruleus, immaculatus, lobis obtusis, crenulatis, labio superiore bifido; inferiore tripartito, laciniis subæqualibus æstivatione superius equitante. STAMINA 4, epipetala, tubo inclusa. FILAMENTA omnia simplicia (ex icone *Baueriana bifida*), 2 *superiora* sub sinubus interlabialibus inserta, conniventia, tubi lateri superiori approximata, antherifera. ANTHERÆ apici obliquo filamenti basi adnatæ, pallidè flavæ, imberbes, apicibus mutuò cohærentibus, bivalves, septo vix completo, contrario; pollen hyalinum, subglobosum, læve, exsulcum. FILAMENTA 2 *inferiora* absque antheris e lata basi subulata, apice parùm dilatato, subovato, acuto, plano. OVARIUM sessile, ovatum, glaberrimum, *squamis* hypogynis 2 oppositis, crassiusculis, truncatis, indivisis subtensum, uniloculare. PLACENTÆ 2 subrotundæ, indivisæ, compressæ, solutæ, polyspermæ, utrinque ovuliferæ, e pedicellis parietalibus adnatis angustis ortum ducentes. STYLUS filiformis, hyalinus, glaber, situ staminum iisque paullò longior. STIGMA peltatum, convexum, papulosum, indivisum. CAPSULA tubo calycis aucti limbo patente arcti cincta, obovata, apice exserto, stylo emarcido terminata, unilocularis, transversim dehiscens, marginibus laceris, operculo crassiusculè membranaceo, dimidio inferiore tenuissimè lacero. PLACENTÆ subrotundæ compressæ, liberæ, utrinque seminiferæ, e pedicellis adnatis filiformibus ortæ. SEMINA minuta, ovali-oblonga, castanea, striis spiralibus pulchrè insignita, basi subobliquè inserta *funiculo* elongato, semen ipsum superante, capillari, hyalino, per lentem pluriès augentem quasi e tubulo unico vel duplici annulari formato. TESTA crasso-membranacea, opaca, striis elevatis spiralibus hinc indè transversim connexis. MEMBRANA *interna* crasso-membranacea, tenax, albicans, areolis subquadratis tenuissimis. ALBUMEN vix ullum. EMBRYO dicotyledoneus rectus, orthotropus, albus. COTYLEDONES semiovatæ, obtusæ, vix longitudinæ *radiculæ* inferæ.—*Brown.*

Gratiola involucrata, Roxb. 'Flor. Ind.' [Ed. Wall.], vol. i,

p. 138, certainly belongs to this genus, and is perhaps not specifically different from the plant here described. But a second species, discovered in Java by Dr. Horsfield, in 1815, may be readily distinguished by the following character:—AIKINIA (*Horsfieldii*) folio unico sessili, caulem simplicissimum terminante, pedunculo solitario pluribusve seriatis.—*Brown.*

[EXTRACTS FROM]

PLANTÆ JAVANICÆ RARIORES,

DESCRIPTÆ ICONIBUSQUE ILLUSTRATÆ,

QUAS IN INSULA JAVA, ANNIS 1802—1818, LEGIT
ET INVESTIGAVIT

THOMAS HORSFIELD, M.D.;

E SICCIS

DESCRIPTIONES ET CHARACTERES PLURIMARUM ELABORAVIT

JOANNES J. BENNETT;

OBSERVATIONES STRUCTURAM ET AFFINITATES PRÆSERTIM
RESPICIENTES PASSIM ADJECIT

ROBERTUS BROWN.

LONDINI.

1838—1852.

PLANTÆ JAVANICÆ RARIORES.

In the postscript to the 'Plantæ Javanicæ' Dr. Horsfield states—"On my arrival in England my zoological collections required my first attention, both with a view to their preservation and to their exhibition in the Honorable Company's Museum. It was therefore no less advantageous to myself than important to science, that Robert Brown, Esq., with a ready and disinterested zeal, undertook the examination and arrangement of my Herbarium. After much time and labour, every specimen of an extensive series of duplicates was examined, all the species of each genus were brought together, the entire Herbarium was distributed into families according to the natural method, and the basis of an accurate catalogue was formed. By this operation the number of species composing the Herbarium, which had previously been vaguely estimated, was determined to be 2196.

"While engaged in this arrangement Mr. Brown noted in each family those subjects which appeared to possess the greatest interest, either on account of their novelty, or of their peculiarity of structure; and from the subjects thus noted he finally made a selection, which it was proposed to publish under the title of '*Plantæ Javanicæ Rariores.*'

"It was at the same time determined that a series of figures for the illustration of all the subjects to be described in the work should be prepared. Although a considerable number of drawings had been made in Java by native artists, these were found useful only in the representation of the general character and habit of the subjects. Mr. Brown therefore undertook the task of preparing such dissections as were necessary for the illustration of the generic characters, or other interesting points of structure, and of generally superintending the execution of the drawings; to this portion of the work Mr. Brown cheerfully devoted particular care and attention, and his experience in analysis of vegetable structure will be duly appreciated by Botanists.

"After the completion of the drawings and of the illustrative details, the subjects were put into the hands of the engraver, and Mr. Brown commenced the preparation of the text. In the prosecution of this task his public engagements, and other important scientific inquiries accumulating in a degree beyond what was expected when he commenced the work, it was agreed between Mr. Brown and myself that the original plan should be modified, and that the assistance of a coadjutor should be obtained.

"On this point I have the satisfaction to state that J. J. Bennett, Esq., Mr. Brown's assistant in the Botanical Department of the British Museum, was found willing to prepare for the press such articles as were left unfinished by Mr. Brown, and likewise to co-operate generally in the preparation of the work. Mr. Brown has, agreeably to his original intention, contributed his remarks on the affinity and structure of the subjects described; he has also afforded many valuable suggestions in the progress of the work, and the whole has received his examination and revisal.

"I embrace with pleasure and satisfaction the opportunity now afforded me of publicly expressing my great obligations to Mr. Brown. The examination and arrangement of my Herbarium, the laborious duties connected with the superintendence of the figures contained in this work, the preparation of the illustrative details, and the time devoted to the description of the subjects, are by no means the only marks of friendship which I have received from that distinguished Botanist; who ever since his arrival in England has afforded to me his advice and assistance in my researches connected with Natural History, and on many other important occasions."

[The Extracts which follow are limited to Mr. Brown's direct contributions, but his invaluable suggestions enrich almost every page of the work.—EDIT.]

1] PLANTÆ JAVANICÆ RARIORES.

POLYPODIUM (DIPTERIS) HORSFIELDII.

Tab. I.[1]

Char. Subgen. (Dipteris) *Sori* subrotundi, sparsi (v. transversim subseriati), inter (frondis palmatæ) venas primarias dichotomas earumque divisiones, venulis divaricatissimis anastomosantibus insidentes. *Indusium* (verum) nullum.

Caudex *repens teres.* Frondes *elongato-stipitatæ binatæ; partiales dimidiatæ palmato-lobatæ.* Venulæ *secundariæ tertiariæ et ultimæ divaricatissimæ, crebre anastomosantes, penultimæ latere soriferæ, ultimæ apice vix dilatato libero.* Indusium spurium *vel* (*in* D. Horsfieldii) *pili sorum cingentes et capsulis intermixti; vel* (*in* D. Wallichii) *materia pulposo-gummosa capsulas immaturas obtegens.*

Polypodium (Dipteris) *Horsfieldii,* frondis binatæ palmatæ subtus glaucæ lobis serratis, soris pilosis.

Dipteris conjugata. *Reinw. in Syllog. Pl. Nov. Soc. Bot. Ratisb., tom.* ii, *p.* 3.

Polypodium Dipteris. *Blume Enum. Pl. Jav., p.* 135.

Descr. Filix 2—3-pedalis, vel elongatione stipitis usque orgyalis. Caudex repens crassitie pennæ olorinæ fibrillas copiosas nigricantes subramosas dimittens squamisque rigidis strigosis atris subulatis setaceo-acuminatis tectus, solidus, constans ligno quasi duplici, utroque e cellulis
2] elongatis impunctatis utrinque acutis composito, cum strato interposito tubum completum constituente, e vasis scalari-

---

[1] The Plates of "Plantæ Javanicæ Rariores," not being at present accessible, will not be given among the Illustrations. They are entirely systematic, and the reader is referred for them to the original work.—Edit.

formibus in laminam transversim interrupte striatam vix definitæ latitudinis facilè, ut in plerisque Filicibus Lycopodineisque, solubilibus. Stipites elongatæ frondem ipsam sæpius superantes crassitie pennæ anatinæ, adultæ glabræ læves pallidè castaneæ teretiusculæ anticè canaliculatæ; vasis scalariformibus tubum ferè completum anticè deficientem efformantibus. Frondes ad basin usque bipartitæ potiusve binatæ; partiales dimidiatæ palmato-lobatæ, lobis incisis indivisisque acuminatis serratis; novellæ utrinque tectæ vellere ferrugineo-castaneo e pilis articulatis laxis constante; adultæ glabratæ pilis nonnullis secundum latera venarum primarium aliisque soros cingentibus relictis. Venæ primariæ dichotomæ validæ, subter prominentes teretes, super vix emersæ, divisionibus ultimis sæpe infra apicem acuminatum lobi conniventibus et unitis. Venulæ secundariæ et tertiariæ divaricatissimæ creberrimè anastomosantes areolas subquadratas sed amorphas efformantes, ultimæ liberæ apice vix dilatato. Epidermidis areolæ minutæ parietibus paulo flexuosis. Stomata in pagina tantum inferiore. Sori parvi subrotundi passim e confluentia duorum amorphi, lateribus venularum tertiarium sæpiusque ubi plures confluunt insidentes, novelli pilis articulatis copiosis semitecti, adulti pilis brevioribus capsulis interstinctis. Capsulæ brevè pedicellatæ annulo verticali incompleto lateribus areolatis. Spora lævia subovalia inæquilatera margine altero convexo altero rectiusculo.

Obs. 1.—Dr. Horsfield, who discovered this remarkable species in 1814, has the following observations respecting it.

"I have four localities for this Fern. The most western is the mountain Karang, situated south of Bantam; next the mountain Gede, south of Batavia; proceeding westward, Ptarangan; and finally Mount Prahu; the latter lies south-west of Samarang. It is remarkable that I never noticed it in my numerous excursions through the eastern provinces; and I have concluded that it is not at all, or at least that it is very rarely, found eastward of the longitude of Samarang, which lies near the middle of the island, as far

as regards its extent from west to east. From its striking physiognomy it could not, I think, have escaped my notice.

"It grows in clusters with fronds of different height, the tallest often equalling five or six feet.

"Its range is above that at which rice can be cultivated in Java, which is about 5000 feet above the level of the ocean. It springs from the black vegetable mould, which very generally covers the mountains of Java."

OBS. II.—Before entering on the subject of the affinities of *Polypodium* (*Dipteris*) *Horsfieldii*, there are some parts of its structure deserving of notice.

In the first place, the existence of the complete circle of vasa scalariformia separating the ligneous or fibrous vessels of the caudex into an outer and inner portion, though not peculiar to Dipteris, seems to be of rare occurrence among Ferns. It exists, however, in the caudex of Platyzoma (though not in that of Gleichenia); and I have observed it also in some (probably it will be found in all) species of Anemia.

I have described *Polypodium* (*Dipteris*) *Horsfieldii* as having hairs surrounding the sorus, and mixed with the capsules, while in the nearly related species *Polypod.* (*Dipteris*) *Wallichii*, the capsules, even when fully formed, are imbedded in a gum-like pulpy substance, the remains of which may always be found, even after the spora are discharged. In the dried specimens examined this pulpy substance had no appearance of organization; in the living plant, however, it will probably be found to be minutely cellular, as I have observed in the nascent sori of several species of Polypodium, in which the production of this cellular pulp precedes the formation of the capsules, and is generally evanescent soon after they become visible. The peculiarity in *Polypod.* (*Dipteris*) *Wallichii* probably, therefore, consists merely in the longer duration of this substance, in which perhaps the capsules of the greater number of Polypodia are formed.

3] OBS. III.—The Fern here described, and the nearly related species *Polypodium* (*Dipteris*) *Wallichii*, form a very distinct section or subgenus of Polypodium, to which they must be referred, while the characters of that genus consist merely in its round sori, and absence of true indusium. But in adding two species, having so singular a habit, to a genus already too extensive, and including so many different forms, it must be evident that the present sources of generic distinction in this Natural Family are very insufficient for its satisfactory analysis.

The number of Ferns at present known, including unpublished species existing in collections, may be stated at upwards of 1800. The Family has been subdivided into five primary groups. These groups are strictly natural; they are not, however, of equal value as to the importance of their characters, and they are extremely unequal in extent; the great mass belonging to that called Polypodiaceæ, which has been divided into upwards of fifty genera, and contains about 1600 species. Of this number nearly one half, or 800, belong to five genera, namely, Polypodium, Aspidium, Nephrodium, Asplenium, and Pteris, as they are at present constituted, Polypodium alone consisting of about 300 species. The extent of Polypodium, therefore, renders its subdivision into natural sections or subgenera absolutely necessary.

For such subdivision, not in Polypodium only, but in other extensive genera of Ferns the most obvious, as well as the most advantageous source of character seems to be the modifications of vascular structure, or the various ramifications of the bundles of vessels, or veins of the frond, combined with the relation of the sori to their trunks or branches.

On this subject many important observations have been made, and subdivisions founded on them proposed by several writers, especially MM. Bory, Gaudichaud, Kaulfuss, Ad. Brongniart, and Blume. I may add, that I have at a still earlier period[1] introduced the ramification and relation of sori to veins into the definitions of several genera, in which these characters had not been before employed, and have more recently,[2] in treating of *Matonia*, pointed out a natural and extensive group in Polypodium, as being readily distinguishable by the sorus originating at the point of confluence of several veins.

---

[1] ['*Prod. Fl. Nov. Holl.*,' i, *p.* 156-8.]

[2] [*Antè*, *pp.* 542-3.]

With respect to DIPTERIS, the section to which our plant belongs, there is no difficulty in distinguishing it from all other groups of Polypodium, and particularly from that now alluded to, if the dichotomous ramification of the primary veins be admitted into its definition. And as that ramification may be said to be necessarily connected with the peculiar division of the frond, this section, so constituted appears to rest on characters at least as important as those of several groups at present generically distinguished from Polypodium, as Cyclophorus, Pleopeltis, Adenophorus, and even Grammitis, Selliguea, and Meniscium.

If, however, the dichotomous primary veins are left out of consideration, no sufficient character remains to distinguish Dipteris from that section of Polypodium, including P. quercifolium, diversifolium, and several other species, and which M. Bory has established, chiefly from the presence of dissimilar sterile fronds, as a subgenus under the name of Drynaria. But the existence of these sterile fronds being neglected, Drynaria cannot be separated from that more extensive section comprehending P. phymatodes, lycopodioides, &c., and to which (including Drynaria) I have referred in my observations on Matonia, in Dr. Wallich's *Plantæ Asiaticæ Rariores.*[1]

These three subdivisions of Polypodium agree in having their sori placed on the point of confluence, or perhaps sometimes of divarication, of several branches of the anastomosing veins; and Dipteris being distinguished by its dichotomous primary veins, the remaining two sections may form one subgenus, for which the name proposed by M. Bory may be adopted.

In many species of DRYNARIA so constituted, the principal vein of the sorus is manifestly that in which the tendency to produce capsules is generally the greatest in the natural order; namely, the lowest branch of the upper or inner side of the primary vein, or that branch which in the appendix to Captain Flinders's Voyage[2] is considered as

[1] [*Antè, p.* 543.]

[2] [*Vol.* i, *p.*. 60.]

having a relation to two different trunks; in other species, in those particularly where the sori are most numerous, and not confined to that branch, it is often difficult to determine the most important vein of the sorus; and in Dipteris it is hardly practicable.

From Drynaria, and from those species of it especially in which the principal vein of the sorus is distinctly marked, [4 the transition is easy to Polypodium aureum, decumanum, and a few other species having anastomosing veins, and in which the sori are placed on the apices of two, or more rarely three, connivent ultimate ramuli, included in an area formed by the anastomosing secondary veins. But these species, from the identity of habit, may be included in, or appended to, a more extensive group, whose anastomosing veins form areæ or meshes, in each of which only one sorus exists, and that terminating a single included branch. This section, which may be named PHLEBODIUM, and whose species have either pinnate, deeply pinnatifid, or more rarely simple fronds, appears to me strictly natural, though it includes several species having the spurious indusium of Pleopeltis, and at least one with an oval or even oblong sorus.

Next to Phlebodium in affinity, as well as in the arrangement of the sori, may be placed a group, most of whose species have simple fronds, and all of which are natives of America. In this group, which may be distinguished by the subgeneric name CYRTOPHLEBIUM, the primary parallel veins are connected by transverse arched branches, from the convex upper side of which generally three (and never more than three) upright parallel simple veins arise, terminating within the area included between the proximate transverse arched branches: of these simple tertiary ramuli the two lateral are soriferous, generally below the apex, the middle branch being always sterile. In one species at least this branch reaches, and is united with, the arched secondary vein above it; and in a few others it is entirely wanting. This arrangement in Cyrtophlebium produces two series of sori between each primary vein, except in the lowest area, or that next the midrib, in which there is one only, and that terminating the single vein exactly as in Phlebodium, into which this group passes by species having the habit of Cyrtophlebium, but with fronds so narrow, that they are reduced to the lowest areolæ, and consequently agree in character with Phlebodium.

An arrangement of veins and of sori analogous to Cyrtophlebium exists in the real species of CYCLOPHORUS or Niphobolus, none of which are natives of America: in all these the secondary veins are straight and parallel, instead of being arched; they are also given off at an angle more or less acute from the primary parallel veins, which they connect; and the tertiary or ultimate branches originating only on the upper side of each secondary vein are parallel with each other, more than three in number, and all of them bearing terminating sori.

An extensive and strictly natural group may be next noticed, though it cannot be considered nearly akin either to any of the preceding sections or to the principal part of that which follows.

This group or subgenus, the LASTREA of M. Bory, whose fronds are either bipinnatifid or simply pinnate, is chiefly intratropical. Its character consists in the secondary veins of the pinnate, and the only veins of the segments of the bipinnatifid fronds being perfectly simple and parallel, with one known exception reaching the margin of the segment, or in the pinnate species uniting with the corresponding vein, and each bearing a lateral sorus, generally about the middle, in some cases near the base, and in a few others proceeding from the base itself.

The closest affinity of Lastrea is not to any group of Polypodium, but to that section of Gymnogramma, the division of whose fronds, and the disposition of veins, are exactly similar, and in which the sori form very short lines of like origin. As the only distinction therefore consists in a difference, generally very slight, in the form of the sorus, it appears to me (and Dr. Blume has made a similar remark) that these two tribes cannot be generically separated, especially as species belonging to both agree in having pilose capsules; and it is at least certain that the section of Gymnogramma referred to should be removed from that genus, and if still distinguished as a genus or subgenus, might receive the name of PLEUROGRAMMA.

This section is also manifestly related to MENISCIUM, which, though readily distinguished by its technical character, may be considered as a subgenus of Polypodium, nearly approaching in vascular structure to the pinnate species of Lastrea, but differing in the sori terminating the corresponding veins at their point of junction, and by their confluence forming a semilunar line. It is deserving of remark, that in some, and especially the original species of Meniscium in that part of the frond where the power of producing capsules is the weakest, the sorus is transferred from the point of union of veins to the upright branch arising from that point, and from semilunar becomes round or sublinear.

Lastrea may even be considered as approaching in [5 affinity rather more nearly to that section of Nephrodium, which M. Gaudichaud has separated under the generic name of Polystichum, than to any subdivision of Polypodium; an approximation which appears to be confirmed by more than one fern, entirely agreeing in habit, in undivided veins and lateral fructification with this group of Nephrodium, but having a short linear sorus, with an Indusium of corresponding form, inserted by its longitudinal axis in the middle of the sorus. To this group the name of MESOCHLÆNA may be given; and though in general appearance it is abundantly different from Didymochlæna, it can only be distinguished from that genus, according to my view of the structure of its indusium, by its simple veins and lateral sori.

The most extensive but least natural section of Polypodium is that in which none of the veins anastomose, the sorus standing either on the apex, generally more or less dilated, of the branch, or distinctly below the apex, which is then scarcely or not at all dilated; the vein when simple, or its upper soriferous division when branched, terminating within the margin of the frond or pinna.

Polypodium vulgare is one of the best examples of this section, which, however, comprehends species with undivided, pinnatifid, pinnate, bipinnate, and even decompound fronds, and these as various in texture as in division. Many species are found within the tropics; but the section includes all the European Polypodia and most of those found in the higher latitudes of the southern hemisphere.

As this section includes many of the earliest described species of Polypodium, it would require, if retained entire, no subgeneric name. But in a complete analysis of the genus it ought to be divided. The strictly natural subdivisions, however, can hardly be characterised from modifications of vascular structure alone; and I have not yet been able to detect sufficient differences, either in the capsules or seeds, by which they may be distinguished.

That subgeneric or sectional characters may in several instances be obtained or assisted from the seeds of this Natural Order is not improbable, and in one case, namely CERATOPTERIS (or Teleozoma), including Parkeria in that genus, even the generic character appears chiefly to reside in the seeds, which in their unusual size and peculiar marking or striation entirely agree in all the species of the genus, while in the original species the annulus is nearly complete; and in Parkeria, differing from the rest of the genus in no other point whatever, the ring is reduced to a few faint striæ.

TAB. I. *Fig.* 1. A frond of *Polypodium* (*Dipteris*) *Horsfieldii*, of the natural size. *Fig.* 2. A portion of the under surface magnified, showing the arrangement of the veins and sori. *Fig.* 3. Another portion of the same, from which a sorus has been removed to show its insertion. *Fig.* 4. A sorus, more highly magnified. *Fig.* 5. A capsule before bursting. *Fig.* 6. A capsule after bursting. *Fig.* 7. Sporules.

ATAXIA HORSFIELDII. [8

TAB. III.

ATAXIA, *Br. in Chlor. Melv. p.* 35. *Kunth, Agrost. Synopt., p.* 39.

CHAR. GEN. *Gluma* locustam trifloram subæquans. *Flosculus inferior* masculus bivalvis; *intermedius* univalvis neuter: uterque dorso aristatus; *terminalis* hermaphroditus diandrus.

Gramen *tam habitu quam structurâ inter* Anthoxanthum *et* Hierochloam *medium, pariterque odoratum.* Gluma *inæquivalvis.* Flosculi *a basi brevissimâ persistenti racheos conjunctim solubiles.* Valvula superior hermaphroditi flosculi *uninervis;* staminibus *axibus valvularum oppositis.*

OBS. *Ataxia* along with *Hierochloe* and *Anthoxanthum* form a very natural and well characterised section, which belongs rather to the tribe *Avenaceæ* than to *Phalarideæ;* and these three genera are in reality so nearly related that they may perhaps be more properly considered as sections of one and the same genus; or at least *Hierochloe* and *Ataxia* might be united. It is deserving of notice that in all of them the upper valve of the hermaphrodite flosculus has a single nerve occupying its axis, and that one of the two stamina is placed opposite to this nerve. The coexistence of these two characters, both of which are remarkable deviations from the usual arrangement in Gramineæ, seems to invalidate the hypothesis respecting the composition of the inner valve of the flower in this family.[1] It might, however, be assumed that the median nerve in these genera is formed of two confluent cords, a view to a certain extent supported by the somewhat analogous structure in the corolla of Compositæ. It might also be assumed

---

[1] General Remarks, &c. in Flinders's Voyage, vol. ii, App. p. 580 [*vol.* i, *p.* 55].

that the stamen belongs to the inner or complementary series, which is rarely developed in triandrous genera. One remarkable apparent exception to the usual order of development of stamina occurs indeed in a genus of grasses found in Abyssinia by Dr. Rüppell, to whom I am indebted for the specimens I have examined. In this genus the locusta contains apparently a single flower, of which the gluma consists of two minute obtuse nerveless valves; the perianthium is formed of two valves nearly equal in size, form, texture, and nerves, which are three in number, the middle nerve of each valve ending in a seta; the stamina are three in number, but instead of being inserted as I have described those of triandrous grasses generally to be, they are placed within the upper or inner valve, the middle stamen being opposite to the median nerve; the embryo also is placed on the side of the inner valve: hypogynous squamulæ are entirely wanting. If the flower here described be really simple, it would present a still more formidable objection than *Ataxia* to the composition of the inner valve of the perianthium. But the arrangement of stamina, and direction of scutellum or embryo, suggest another hypothesis with respect to the Abyssinian genus; namely, that the flower is not simple, but made 9] up of two flowers reduced to their outer valves. This latter view I am disposed to adopt, not only on considering the usual order of suppression of the parts of the floral envelope in grasses; but from the same degree of reduction actually existing in several *Paniceæ*, to which primary division of *Gramineæ* the Abyssinian genus would according to this view belong. It may be added that the genus referred to very remarkably agrees, both in habit and structure, with an unpublished genus discovered by Ehrenberg, likewise in Abyssinia (*Podopogon*, Ehrenb. MSS.), and which unquestionably belongs to this primary division of the order.

SCLERACHNE PUNCTATA. [15

TAB. IV.

SCLERACHNE.

CHAR. GEN. *Spicæ* androgynæ, fasciculatæ, singulæ involucro monophyllo foliaceo inclusæ; constantes locustâ inferiore (raró duâbus) femineâ sessili, et alterâ pedicellatâ masculâ, utrâque biflorâ.

♂ *Gluma* bivalvis, subæquivalvis, nervosa, herbacea; *flosculo* utroque bivalvi, membranaceo.

♀ *Gluma* bivalvis; *valvula exterior* dimidio inferiore cartilagineo pedicellum locustæ masculæ amplectens, margine altero equitante, superiore compresso semiherbaceo nervoso; *interior* membranacea, acuminata. *Flosculus inferior* univalvis, neuter, glumæ interiori analogus; *superior* femineus, bivalvis, valvis angustatis acutis, stylo bifido, stigmatibus hispidulis.

Gramen *glabrum; culmo ramoso, geniculato; foliis planis; ligulâ brevissimâ, ciliatâ.* Affinitate proxima *Coici arundinaceæ*, Willd., quæ genus proprium (CHIONACHNE) efformat, a *Coice* diversum defectu veri involucri osseo-cartilaginei; in hâc plantâ enim involucrum auctorum gluma inferior locustæ femineæ est, ut in *Sclerachne*, a quâ *Chionachne* distinguitur præsertim figurâ et texturâ uniformi glumæ inferioris locustæ femineæ, et insuper spicâ locustis masculis pluribus, nec unicâ, etiam habitu.

SCLERACHNE *punctata*, R. BR.

20]

POLYTOCA BRACTEATA.

TAB. V.

POLYTOCA.

CHAR. GEN. *Spicæ terminales* masculæ; *axillares* androgynæ, infrâ femineæ; utriusque rachi ad articulos singulos bifloros solubili. *Locustæ masculæ* bifloræ, biglumes; stamina 3; squamulæ hypogynæ 2. *Locusta feminea* biflora, biglumis: *Glumæ valvula exterior* cartilaginea, rachin angustam amplectens, nervosa, alata; *interior* lævis, acuminata: *flosculus exterior* univalvis, neuter, glumæ interiori analogus; *interior* femineus, bivalvis, lodiculâ nullâ.

Gramen *elatum: foliis planis, margine asperis; ligulâ brevi, ciliatâ.* Articuli feminei spicæ androgynæ *locustâ neutrâ, univalvi, herbaceâ, articulum amplectente, stipati.* Locustæ masculæ flosculus superior *paulò præcocior.* Stigmata *longissima, colorata.* Affinitate hinc *Tripsaco,* inde *Chionachni.* An hujus generis, vel forsan generis distincti valde approximati, *Coix heteroclita,* Roxb. Fl. Ind. 3, p. 572.

POLYTOCA *bracteata,* R. BR.

HEXAMERIA DISTICHA.

TAB. VII.

HEXAMERIA.

CHILOGLOTTIS v. APPENDICULA, *Blume Bijdr.* p. 296-7, ad MALAXIDEAS pertinens.

CHAR. GEN. *Perianthium* erectiusculum, sepalis lateralibus exteriorum basi connatis et infrà productis in saccum maximum calcar obtusum emulantem. *Labellum* e basi calcaris ortum, unguiculatum; laminâ superné indivisâ, basi bisetâ. *Columna* brevissima. *Anthera* (filamento insidens) stigmati bilobo parallela, bilocularis. *Massæ pollinis* cereaceæ, in singulo loculo tres (!), quarum duæ inferiores collaterales, tertia superior, omnes apice acuto affixæ corpusculo septiformi loculum longitudinaliter bipartienti et cum eodem deciduæ.

Epiphyta *nana;* caule *ramoso;* foliis *distichis, mucronatis, basi in petiolum brevem semivaginantem attenuatis;* racemis *terminalibus, paucifloris.*

OBS. *Hexameria* proxima *Chiloglottidi* esse videtur, forsanque ab ipsâ *Chiloglottidi serpyllifolia,* Bl. haud diversa; et si in hâc necnon in *Appendiculis* omnibus septa mobilia decidua loculos antheræ bipartientia et massas pollinis affigentia exstant hæc tria genera conjungi merentur. Numerus ternarius enim massarum, quamvis characterem insignem, et in *Hexameriâ distichâ* constantem, præbens, minoris certè valoris considerari debet.

HEXAMERIA *disticha,* R. BR.

8] PHALÆNOPSIS AMABILIS, Bl.

TAB. VIII.

PHALÆNOPSIS, *Blume Bijdr.*, *p.* 294. *Lindl. Orchid.*, *p.* 213.

VANDEÆ, *Lindl. Orchid.*

CHAR. GEN. *Perianthium* explanatum, 5-partitum. *Labellum* ecalcaratum, unguiculatum: *laminâ* tripartitâ: *lobo medio* hastato, apice laciniis duâbus elongatis subulatis, dente intermedio obsoleto. *Columna* libera, cum ungue labelli continua; apice obliquo trifido. *Anthera* bilocularis. *Massæ pollinis* cereaceæ, duæ (in singulo loculo singula), subglobosæ, singulæ ex apice depresso funiculum elasticum exserentes, ope cujus apici dilatato processûs e glandulâ stigmatis orti separatim affixæ.

Herba *arboribus innascens;* caule *abbreviato foliato haud dilatato;* foliis (2—4) *oblongis explanatis rigidis;* scapo *elongato;* racemo *laxo;* floribus *speciosis albis;* sepalis lateralibus interiorum *dilatatis;* labelli ungue *apice tuberculo aucto*, laminæ lobis lateralibus *unguiculatis;* columnæ laciniis lateralibus *deflexis, glandulam stigmatis ejusque processum tegentibus.*

LOXOTIS OBLIQUA. [102

TAB. XXIV.

CHAR. GEN. *Calyx* tubulosus, 5-fidus, æstivatione valvata. *Corollæ personatæ labium superius* abbreviatum, bilobum; *inferius* productum, semitrilobum (lobis lateralibus nanis). *Stamina* inclusa; *antherifera* duo, antheris reniformibus. *Stigma* capitatum (vix divisum). *Capsula* subovata, calyce inclusa, bivalvis; *placentis* utrinque seminiferis.

Herba *alternifolia, annua, erecta, glabriuscula.* Caule *succulento.* Foliis *integerrimis, basi hinc altè excisis.* Racemis *subsecundis, indivisis, pedicellis solitariis, unibracteatis, floribus deflexo-porrectis, cæruleis.*

Obs. Genus ad tribum Cyrtandracearum pertinens, proximum Glossantho, quæ, foliis et inflorescentia omnino conveniens, vix aliter differt nisi staminibus quatuor antheriferis antheris in coronulam cohærentibus, calyce basi inæquali angulisque tubi altius alatis, labio corollæ inferiore indiviso et disco hypogyno completo.

LOXOTIS OBLIQUA.

a. Calycis laciniæ acutiusculæ tubo breviores.

Antonia vel Loxotis. *R. Br. in Wallich, Pl. Asiat. Rar., vol.* iii, *p.* 65, in obs. sub Aikinia.

Loxotis obliqua. *Benth. Scrophul. Ind., p.* 57.

Wulfenia obliqua. *Wallich, Tent. Flor. Nepal., p.* 45, *t.* 35. *Don, Flor. Nepal. Prodr., p.* 92.

Rhinchoglossum obliquum. *Blume, Bijdr. Stuk.* 14, *p.* 741?

β. Calycis laciniæ acutissimæ tubo longiores.

Loxotis intermedia. *Benth. Scrophul. Ind., p.* 57.

Wulfenia intermedia. *Wallich, Cat. n.* 408?

DESCR. Herba annua, erecta, glabriuscula, pube brevi articulata acuta rara conspersa. *Radix* fibrosa. *Caulis* teres, succulentus, crassitie pennæ anserinæ, 3—12-uncialis, modo simplicissimus sæpius parum ramosus, ramis ad ortum cum ipsa basi petiolorum confluentibus sæpe duobus 103] v. tribus seriatis, inferiore (cauli proximo) præcociore. *Folia* alterna, petiolata, exstipulata, integerrima, membranacea, lætè viridia, circumscriptione subovata cum acumine brevi, inæquilatera, basi hinc altè et ad nervum usque excisa inde rotundata, venis primariis vix eminentibus costata, venulis immersis, ultimis obsoletis, utrinque pube in adultis rarissima instructa, quandoque glaberrima, 2½ usque 4 pollices longa. *Petioli* antice canaliculati 1—1½ unciales. *Racemi* terminales et axillares, simplicissimi, secundi, 2—4-unciales, rari, basiflori, pedicellis alternis recurvis unifloris unibracteatis. *Bracteolæ* vel subtendentes vel ipso pedicello insidentes, angustissimè lineares subfiliformes, erectæ, virides, pedicellis breviores. *Flores* deflexo-porrecti, cærulei. *Calyx* liber, tubulosus, 5-gonus, viridis, subbilinearis, æqualis, persistens; *tubi* lateribus planis, angulis in aciem alamve augustissimam exstantibus, minutè denticulatis, basi obtusa æquali; *limbi laciniis* semilanceolatis acutis sæpius acutiusculis tantum, æstivatione valvata alabastro acuto. *Corolla* monopetala, lætè cærulea, glaberrima, personata; *tubus* calyce longior subcylindraceus: *faux* clausa arcu elevato transverso tenuissimè pubescenti ad basin utriusque labii, inferioris stria verticali brevi in areas duas pro receptione antherarum distincto: *limbus* bilabiatus: *labium superius* brevius, bifidum, respectu axeos racemi adscendens, lobis obtusis sinu rotundato; *labium inferius* lingulatum, cæruleum basi macula flava insignitum, apice semitrifido lobulis obtusis, lateralibus nanis. *Stamina antherifera* duo inclusa; *filamentis* sinubus lateralibus labii inferioris suboppositis, compressis, adscentibus, glabris: *antheris* reniformibus, imberbibus, conniventibus leviterque cohærentibus, violaceis, bilocularibus, loculis basi divaricatis apice confluentibus, utriusque valvula interiore breviore et angustiore: *pollen* brevè ovale, obtusè trigonum. *Filamenta sterilia* tria, quorum *duo* sinubus interlabialibus respondentia, apicibus simplicibus acutiusculis: *tertium* nanum axi labii superioris oppositum. *Ovarium* liberum, sessile, ovatum, compressum, glabrum, viride, utrinque sulco longitudinali axi placentæ lateralis respondenti insculptum, uniloculare, polyspermum: *placentis* duabus parietalibus, lateralibus, e lamina angusta ortis, bilobis, lobis planis, utrinque et per totam ferè superficiem ovuliferis. *Stylus* filiformis glaber pallidus, situ et longitudine staminum antheriferorum, diu persistens. *Stigma* depresso-capitatum indivisum papulosum stylo manifestè crassius. *Vaginula* hypogyna incompleta, venoso-striata, glaberrima, subtruncata sæpè lobata. *Capsula* deflexa, calyce persistenti arctè cincta ejusque longitudine, ovata, compressa, utrinqne sulco longitudinali insculpta, unilocularis, bivalvis. *Placentæ* parietales duæ, axibus valvularum lamina angusta in lamellas duas fissili adnatæ, bilobæ, lobis expansis utrinque seminiferis. *Semina* undique versa, parva, numerosissima, elliptico-oblonga utrinque acuta, basi funiculo brevi crassiusculo pallido affixa; *testa* crassiusculo-membranacea; *membrana interna* obsoleta. *Embryo* exalbuminosus, aqueo-pallidus, cavitatem testæ replens, rectus; *cotyledones* breves; *radicula* teretiuscula umbilicum attingens.

I observed the plant here described and figured in the Island of Timor near Coepang, chiefly in shady places, but sometimes in more exposed situations, in April, 1803. The same species was several years after collected in many parts of Java by Dr. Horsfield, who states that it grows "in shaded situations at no great elevation above the ocean, near rivulets and ponds, rarely in forests; and that the native name is *Turu-pencheng*." If I am correct in referring *Rhinchoglossum obliquum* to our plant, it was observed also by Dr. Blume in mountainous situations of the same island, flowering in February.

By Dr. Wallich it was found in Nepal, Sylhet, and also in Martaban; for although he has considered the plant from the last-mentioned region as a different species, named *L. intermedia* in his list, and for which Mr. Bentham has

proposed a specific difference, yet I find that the greater number of specimens collected in Nepal in 1819, and sent by Dr. Wallich to Sir Joseph Banks in the following year, have the deeply divided calyx with very acute and narrow segments characteristic of *L. intermedia,* while among the specimens from Martaban, in Dr. Wallich's Indian Herbarium, in the Museum of the Linnean Society, both states of calyx occur. But though I am not disposed to regard these differences in calyx as of specific importance, it is right to state that all the specimens which I have examined from Java and Timor, as well as those from Jurreepanee in the collection of Dr. Royle, agree in having the broader less acute and shorter segments of calyx, as represented in Mr. Bauer's figure, and also in that of Dr. Wallich.

With respect to the generic name *Loxotis* here adopted, it is that which I first gave in my manuscripts to the plant now described. This, however, I many years ago changed to *Antonia,* in compliance with the request of my lamented friend and fellow-traveller Mr. Ferdinand Bauer, to whom I was indebted for the figure here published. But as that name, by which it was introduced into a celebrated flower piece, painted in honour of the late Baron Jacquin at Vienna, and well known to the botanists of that capital, was never otherwise made public, and as Antonia of Pohl since published in his work on the "Plants of Brazil (vol. ii, p. 13, tab. 109)" is sufficiently established as a genus, I have been obliged to recur to my original name, under which indeed it has already appeared in Mr. Bentham's "Essay on Scrophularinæ Indicæ." The name *Loxotis,* however, may now be objected to from its too close resemblance in sound and identity of meaning, to *Loxonia,* another genus of the same family, more recently established by Dr. Jack; and the specific name *obliqua* is hardly less exceptionable, being merely a translation of that of the genus. This difficulty would be easily removed were it absolutely certain that *Rhinchoglossum* of Dr. Blume was identical with *Loxotis;* but from some of the characters ascribed to it I am not entirely satisfied that such is the case; and, indeed, as it is arranged by its author with *Rhinantheæ,* had I not remarked that it had been referred with a doubt to *Cyrtandraceæ* by Professor Lindley, in his enumeration of the genera belonging to that family, I should probably have overlooked it altogether, as I had previously done with respect to *Epithema* of Blume, which the author included in *Primulaceæ,* though unquestionably the same genus with my *Aikinia,* also belonging to *Cyrtandraceæ.*

With regard to the genus itself, it may be doubted whether *Loxotis* and *Glossanthus* ought to be generically distinguished merely or chiefly on account of the difference in the number of their antheriferous stamina, especially as they entirely agree in habit, in which there is something peculiar. It is not a little remarkable, that in some of the more minute and less important differences between them, the intermediate structure or connecting link should be found in a species sent by Dr. Schiede from Mexico (*Glossanthus Mexicana,* Br. ined.), and that this should be the only plant belonging to *Cyrtandraceæ* hitherto observed in any part of America.

Tab. XXIV. *Fig.* 1. *Loxotis obliqua,* natural size. *Fig.* 2. A front view of a flower, slightly magnified. *Fig.* 3. An opposite view of corolla only. *Fig.* 4. Corolla laid open, showing the antheriferous and the two lateral barren stamina (the minute rudiments of the 5th omitted). *Fig.* 5. Calyx, after the falling of corolla, with the persistent style and stigma. *Fig.* 6. An antheriferous stamen. *Fig.* 7. Pistillum separate and magnified (the hypogynous incomplete disk wanting). *Fig.* 8. Upper part of style with the slightly and unequally bilobed stigma. *Fig.* 9. Capsule with its persistent style, natural size. *Fig.* 10. The same magnified. *Fig.* 11. Capsule after bursting, showing the form of one of the parietal placentæ. *Fig.* 12. A placenta separate. *Fig.* 13. A transverse section of a capsule, showing the origin of the placenta and insertion of seeds on both surfaces. *Fig.* 14. A valve of the capsule with its placenta, from which the seeds have been removed. *Fig.* 15. A side view of the same. *Fig.* 16. A seed, with its testa. *Fig.* 17. A seed, deprived of its testa. *Fig.* 18. The embryo.

105]

LOXONIA ACUMINATA.

Tab. XXV.

Loxonia, *Jack in Linn. Trans.*, xiv, p. 40.

Char. Gen. *Calyx* 5-partitus æqualis, æstivatione valvata. *Corolla* bilabiata; *fauce* aperta; *labio superiore* semibifido; *inferiore* trifido. *Stamina antherifera* 4, didynama, exserta; *antheris* reniformibus, per paria approximatis. *Stigma* bilobum, obtusum. *Capsula* ovata, calyce persistente longiore cincta, bivalvis; *placentis* utrinque seminiferis.

Herbæ *v.* Suffrutices. Folia *opposita, inæqualia: majore inæquilatere, dentato; altero nano, integerrimo, stipuliformi.* Racemi *subcymosi, recurvi, sæpè bifidi, ex alis foliorum stipuliformium.*

Obs. Genus Cyrtandracearum a b. Jack conditum et ad eandem sectionem cum *Loxoti* referendum, sed affinitate arctius junctum cum *Stauranthera* in quâ folia opposita nec alterna, pari modo inæqualia, altero nempe nano stipuliformi; altero inæquilatere.

Loxonia *acuminata,* pubescens, foliis lanceolato-oblongis acuminatis denticulatis; nanis reniformibus, racemis subbifidis folio brevioribus.

Descr. Suffrutex parcè tenuissimèque pubescens. Caulis erectus vel adscendens, ramis teretibus parum flexuosis, pube subappressa. Folia opposita, quorum alterum lanceolato-oblongum accuminatum inæquilaterum, denticulis brevissimis, subsessile, ni fallor aversum, basi hinc (lateris inferioris) obtusâ rotundatâ, superioris et angustioris excisâ, costatum, venis primariis alternis arcuatis intra marginem deliquescentibus anastomosantibus, secundariis tertiariisque divaricatissimis, ultimis reticulantibus immersis, 5—8

pollices longum 2½—3 pollices latum, membranaceum, viride, subtus pallidius, in cujus alâ rudimentum minutum gemmæ foliaceæ: alterum nanum stipuliforme sessile reniforme latius quam longum integerrimum, e cujus alâ pedunculus folio majore brevior, nano ipso multotiès longior. *Racemus* subbifidus, ramis 3—5-floris, bracteis subulatis. *Calyx* 5-partitus: *laciniæ* lanceolatæ acuminatæ herbaceæ pilosæ pilis crebris articulatis acutis patulis, longitudine æquales, duæ laterales superiorum paulùm angustiores, trinerviæ, æstivatione valvatâ alabastro ovato acuminato, acuminum apicibus distinctis. *Corolla* monopetala bilabiata, calyce parùm longior, glabra; *tubo* ven- [106
tricoso calyce breviore; *fauce* apertâ infernè barbatâ; *labio superiore* semibifido plano, lobis obtusis; *inferiore* profundè trifido, lobis obtusiusculis integerrimis, medio paulò longiore. *Stamina antherifera* quatuor didynama exserta limbo tamen breviora. *Filamenta* subulata conniventia glabra, duo inferiora longiora. *Antheræ* conformes per paria approximatæ et leviter cohærentes, imberbes, reniformes, loculis divaricatis apice confluentibus medio anticè longitudinalitèr dehiscentibus. *Pollen* subglobosum. Rudimentum staminis quinti brevissimum absque antheræ simulacro. *Ovarium* liberum sessile ovatum glaberrimum disco annulari angustissimo imberbi basi cinctum, uniloculare, placentis duabus parietalibus bifidis lobis divaricatissimis planis utrinque ovuliferis. *Stylus* cylindraceus glaber longitudine circiter staminum. *Stigma* obtusum papulosum obsoletè bilobum stylo parùm crassius. *Capsula* ovata cuspidata membranacea calyce persistenti brevior unilocularis bivalvis, cuspide bipartibili; valvulæ medio placentiferæ; placenta singula utrinque dilatata in laminam rectam marginibus utrinque seminiferis. *Semina* numerosissima minuta obovata sessilia, sæpè angulata mutuâ pressione, castanea: testa membranacea tenax: membrana interna tenuissima albumini parco v. parcissimo adhærens. *Embryo* rectus aqueo-pallidus subovatus, cotyledonibus brevissimis.

I have considered the plant here figured as distinct from

Loxonia hirsuta of Jack, which, however, it appears from his description to resemble in so many points that it may actually belong to the same species, differing only somewhat in the form of the leaves and in being less pubescent. Dr. Jack did not find his plant in fruit, neither did he ascertain the dehiscence of the capsule in *L. discolor*, from which the character of the genus was formed. In both species he describes the ovarium as bilocular, and the lobes of the placentæ as revolute.

Dr. Horsfield found this plant in 1818, when he accompanied Sir Stamford Raffles on his journey from Padang—one of the principal stations on the west coast of Sumatra—to the Menangaboo country, growing on the ranges of hills which extend parallel to the coast from N.W. to S.E., in shaded forests between 500 and 1000 feet above the level of the ocean. He did not observe it in Java.

TAB. XXV. *Fig.* 1. *Loxonia acuminata*, natural size. *Fig.* 2. A flower, magnified. *Fig.* 3. An anthera, with a portion of the filament. *Fig.* 4. Style and stigma. *Fig.* 5. Capsule surrounded by the calyx. *Fig.* 6. Capsule after dehiscence, the calyx being removed. *Fig.* 7. One of the valves of the capsule. *Fig.* 8. Transverse section of the ripe capsule. *Fig.* 9. A seed. *Fig.* 10. The embryo.

CYRTANDRACEÆ, to which *Loxonia and Loxotis* belong, was established in 1822[1] by the late Dr. Jack as a natural order, according to him most nearly allied to *Bignoniaceæ*, but differing sufficiently from that family in the structure of its fruit, especially in the placentation of its minute seeds.

The existence or absence of albumen in the ripe seed is not expressly stated in his character of the order, nor is it noticed in the description of any of the species he has referred to it. It may, however, be presumed that he believed the whole family to agree in this respect with *Bignoniaceæ*, next to which he had placed it; and he had at least the proof of the absence of albumen in Roxburgh's figure of his *Incarvillea parasitica*, in which the structure of ovarium as well as of seeds is correctly given.

---

[1] 'Linn. Soc. Trans.,' vol. xiv. p. 23.

The genera referred by Dr. Jack to this new family are *Cyrtandra* of Forster, *Didymocarpus* of Wallich, and [107 two other genera for the first time proposed, namely, *Æschynanthus*, to which Roxburgh's *Incarvillea parasitica* belongs, and *Loxonia*.

Nearly about the same time Mr. Don published his *Didymocarpeæ*,[1] a family consisting of two of Dr. Jack's *Cyrtandraceæ*, namely, *Didymocarpus* and *Æschynanthus* (his *Trichosporum*), and a new genus *Lysionotus*. He in like manner depends chiefly on placentation, which is not very clearly described; and he also introduces into his character the absence of albumen, the pendulous position of seeds, and the undivided stigma. From this family he excludes *Cyrtandra*, which has, he states, erroneously however, a copious albumen; while *Chirita* of Dr. (Buchanan) Hamilton, of which Dr. Jack's *Didymocarpus* includes at least one species, is doubtfully referred to *Scrophularinæ*, chiefly on account of its bilamellar stigma.

In 1826 Dr. Blume[1] refers *Cyrtandraceæ* to the natural order *Bignoniaceæ*, distinguishing it as a tribe from true *Bignoniaceæ* by its pendulous seeds, and subdividing it into two sections; the first, *Trichosporæ*, with capsular fruit, and seeds either winged or with some other form of appendage; the second, *Cyrtandreæ*, having baccate fruit and seeds without appendage. To each of these sections he has added more than one new genus, but *Loxotis* and *Loxonia* are not included in either of them; though *Loxotis*, as I have already stated, is probably his *Rhinchoglossum*, referred by him to *Rhinantheæ;* and *Loxonia*, notwithstanding his account of the fruit, may possibly be his *Loxophyllum*, which he has placed in *Scrophularinæ;*

---

[1] 'Edinburgh Philosophical Journal,' vii. p. 83, and '*Prodromus Floræ Nepalensis*,' p. 121.

[2] '*Bijdragen*,' p. 759.

while his *Epithema,* my *Aikinia,* also belonging to *Cyrtandraceæ,* he refers to *Primulaceæ.*

It is somewhat remarkable that none of these writers should have adverted to the affinity of this new family to *Besleriaceæ* of Richard and De Jussieu, now generally named *Gesneriaceæ.* This affinity, however, did not escape Dr. Von Martius, who in his elaborate account of *Gesneriaceæ,* published in 1829,[1] considers *Cyrtandraceæ* as sufficiently distinct from that order in the absence of albumen and in having an inverted embryo: the latter character he states on the authority of Mr. Don, who, in employing the term "Embryo inversus," can only have intended to express its direction with respect to pericarpium; such at least is the real structure of those genera which he referred to his *Didymocarpeæ,* and it is certain that in the relation of embryo to hilum both families entirely agree.

Dr. Von Martius also notices the difference in the order of abortion of stamina between these two families, which is no doubt generally true, but admits in each of at least one exception; *Sarmienta* in *Gesneriaceæ,* agreeing with *Cyrtandraceæ* in having only its two anterior or lower stamina antheriferous: and in this latter family *Aikinia* or *Epithema,* which, as in the greater part of diandrous *Gesneriaceæ,* has its two posterior or upper stamina perfect.

There is indeed another, and that a very remarkable, distinction noticed in the position of the lobes of the stigma, which in *Gesneriaceæ,* according to Von Martius, are placed right and left in relation to the parts of the flower, and consequently opposite to the lateral parietal placentæ; while in *Cyrtandraceæ* the lips of the stigma—for so it is necessary to express the fact in this family—are anterior and posterior, and therefore alternate with the lateral placentæ; the latter being the ordinary relation in unilocular ovaria, where the placentæ and lobes, or rather lips, of stigma, correspond in number. This difference, however, even were it fully established, would hardly be available here as a technical distinction, several genera in each family having an undivided stigma; unless in such cases the position of the confluent parts could be determined by that of the two vascular cords generally observable in the style, and continued into the axes of the lobes of a regularly bifid stigma, when belonging to an ovarium composed of two carpels. But even if this distinguishing character should be admitted to be general, it is certainly not without exception; and in the only cases that I have examined in *Gesneriaceæ*, where the lateral position of the lobes of stigma may be supposed to exist, the apparent position arises from the extreme breadth and manifest division of the lips, the two vascular cords of the style being still anterior and posterior.[1]

---

[1] '*Nov. Gen. Pl. Bras.,*' iii. p. 72.

The only point of difference remaining, therefore, is [108 the existence of albumen in *Gesneriaceæ* and its absence in *Cyrtandraceæ*. This character, however, is not absolutely constant, there being cases in *Cyrtandraceæ* where the [109 remains of albumen are visible in the apparently ripe seed; and in several *Gesneriaceæ* it exists so sparingly as to become a character of very little value,[2] especially as it is not here connected with other more important differences.

[1] Here follows a note "On the relative position of the Divisions of Stigma and Parietal Placentæ in the Compound Ovarium of Plants," which, having been originally distributed also in a separate form, has been already given in vol. i. pp. 553—563.—EDIT.

[2] The late Correa de Serra, in a very ingenious essay published in 1811,[1] endeavoured to establish a test for ascertaining the importance of albumen in relation to the affinities of plants, namely, that where the albumen is of a texture very different from that of the embryo, which does not absorb it in germination, its constancy may be depended on; while in those cases where its texture is nearly similar to that of the embryo, which derives from it its earliest nourishment, its presence or absence becomes of little value. His hypothetical expression of this difference is, that in the latter case the embryo before germination converts part of a uniform substance into its own body, and in germinating derives nourishment from the remainder; in the former it selects what is suited for its nourishment, leaving a residuum which it does not afterwards act upon, and whose presence is therefore constant. Among the examples given of families in which this selection and residuum exist are *Gramineæ*, *Palmæ*, *Nyctagineæ*, *Caryophylleæ*, and *Euphorbiaceæ*.

Soon after the publication of this essay a paper was read before the Linnean Society of London, in which I endeavoured to prove that the test attempted to be established by Correa was liable to many exceptions, and that his hypo-

---

[1] '*Annales du Muséum*,' xviii. p. 206.

110| In describing the genus *Aikinia* (*Epithema* of Dr. Blume) I regarded *Cyrtandraceæ*, or *Cyrtandreæ*, for the reasons now assigned, as a tribe merely of *Gesneriaceæ*, 111] distinguishable from that portion of the order with hypogenous corolla, or *Besleriea*, by characters either of little importance or which required confirmation. For although, in addition to the characters referred to, *Cyrtandreæ* differ very remarkably in geographical distribution from the rest of the family, yet this difference is not entirely without exception, as I have already noticed in my account of *Loxotis*.

But whether these groups be considered as distinct families, or as tribes only, it will probably be admitted that in a natural classification *Cyrtandreæ* must stand next to *Besleriea ;* while on the other hand they appear to be very nearly related to *Bignoniaceæ*, with which they are connected through *Incarvillea*, particularly with that section of it which in Dr. Royle's Illustrations I have described as a sub-genus, and named *Amphicome*. This sub-

thetical expression of the facts was not applicable even to all the families he has cited in support of it. And I concluded that as a general rule the point most to be depended on in proving the importance of albumen in systematic botany was its relative quantity, especially when accompanied with a low degree of development of embryo; for where the albumen forms the great mass of the seed in any known portion of a natural family, it may in most cases, though not always, be safely inferred, not only to be present, but to exist in like proportion in the whole of that family. This rule, however, I regarded as merely empirical, founded on extensive experience, but not necessarily connected either with uniformity or even apparent importance of function; for while in some families in which its proportion to the whole body of the seed is the greatest, it constitutes the early nourishment of the embryo, in others, where it exists in equal quantity, it is either not at all or but slightly acted upon in germination. I stated also that there were cases in which this character was of reduced importance, existing only in certain tribes of one and the same great natural family, as in *Rubiaceæ ;* nor are there wanting instances in which it is only of generic value.[1] And, lastly, I noticed that in several families, in which the constancy of the character was very general, exceptions occurred, dependent on the apparent necessity for an unusual development and increased energy in the embryo, connected either with the unfavorable circumstances in which it was destined to vegetate, as in plants growing in or exposed to the action of salt-water; or where great resistance, arising from the structure of the pericarpium, or even from the texture of the proper integuments of the seed itself, was to be overcome in germination.

---

[1] 'Linn. Soc. Trans.,' vol. x. p. 36 [*vol.* i. *p.* 23], *et* '*Prodr. Flor. Nov. Holl.*,' vol. i. *passim.*

genus Professor Lindley has lately considered generically distinct from *Incarvillea*. But except those differences in the seeds and calyx, which I have regarded, and still consider, as only of sectional value, I find no other characters whatever in the flower or fruit to justify the separation; for in both species of *Amphicome*, as in the original *Incarvillea*, the ovarium as well as the capsule is certainly bilocular, and not unilocular, as it is described in the species figured in the 'Botanical Register' (for 1838, t. 19), and the two subgenera entirely agree in the peculiar structure of the anthera, the spur of each of whose loculi originates not on the back, but front of the cell, in the line of dehiscence, which it limits.

The following characters of *Gesneriaceæ*, and of the [112 three tribes of which, according to my view, it consists, may serve to distinguish the family from the nearly related orders, and the tribes readily from each other.

GESNERIACEÆ, *Richard et de Jussieu.*

Calyx 5-divisus, æqualis (rarò parùm inæqualis). *Corolla* monopetala, irregularis, limbo 5-lobo, æstivatione imbricata. *Stamina* antherifera 2 v. 4, cum v. absque quinti postici rudimento. *Ovarium* (liberum v. adnatum) uniloculare (nunc approximatione placentarum quasi biloculare); basi disco lobato v. indiviso cinctum; *placentis* 2 parietalibus lateralibus (sæpiùs bilamellosis) polyspermis; *ovulis* anatropis. *Pericarpium* capsulare v. baccatum. *Semina* parva (raphe nulla), albuminosa v. exalbuminosa; albumine carnoso, molli, copioso v. parco. *Embryo* rectus, axilis, orthotropus, dimidium albuminis dum adsit æquans v. superans.

Herbæ v. Suffrutices foliis *simplicibus, indivisis, exstipulatis, oppositis, verticillatis alternisve, sæpiùs serratis crenatisve nunc integerrimis, in plerisque pube simplici, acutâ v. capitata.* Inflorescentia *varia.*

GESNERIEÆ.

Calyx cum ovario plùs minùs connatus. *Pericarpium* capsulare. *Semina* albumine copioso.

BESLERIEÆ.

Calyx liber. *Pericarpium* baccatum v. capsulare. *Semina* albuminosa.

CYRTANDREÆ.

Calyx liber. *Pericarpium* capsulare v. baccatum. *Semina* exalbuminosa v. albumine parco.

OBS. The following remarks relate to the modifications of the different parts of fructification in *Cyrtandreæ* and their relative importance in characterising genera.

The CALYX admits of every degree of depth of division. Its segments are generally acute, always so when divided to the base; and wherever acute the æstivation appears to be valvular. In several cases where the calyx is tubular, particularly in the greater part of true *Didymocarpus*, and in one of the sections of *Æschynanthus*, the segments are rounded, and the æstivation necessarily overlapping. The tubular calyx, when accompanying an elongated capsule, is generally thrown off or separates tranversely at the base, except in the few cases in which the capsule is pedicellated. The deeply divided calyx of the genera with elongated capsules is persistent; as it also is, whether deeply divided or tubular, in all those with short capsules and in the 113] baccate genera. None of these modifications appear to be of generic value, though some of them form the principal characters of very natural sections of genera.

The *tube* of the COROLLA varies greatly in length, but its various proportions, either with respect to the limb or calyx, are seldom of generic importance; a difference of this kind, however, forms the only distinguishing character between *Bæa* and *Streptocarpus*. The *limb* varies considerably in form, direction, and proportion of lips; but the most important modification occurs in *Glossanthus* and *Loxotis*, in both of which the lateral lobes of the lower lip are obsolete; or, in the former genus, perhaps, altogether wanting. This modification is necessarily accompanied by a different æstivation, which in all the other genera is quincuncial, the lateral lobes of the lower lip overlapping the upper, which covers the middle lobe of the lower. The spur of the tube is found only in one of the two species of *Stauranthera*.

The number of antheriferous STAMINA, or the difference between the diandrous and didynamous plants of the tribe, is not always of much value; for in *Didymocarpus* there are several didynamous species which certainly do not form a natural section. *Stamina inclusa* and *exserta* generally mark distinct genera, but yet not in all cases. The difference between parallelism and divarication of the lobes of antheræ is always, I believe, of generic importance. The various degrees of confluence of the divaricate lobes, and the apparently peculiar dehiscence in some of its modifications, seem not to be of equal value.

The STIGMA exhibits various remarkable differences, some of which are considerable, though not always of equal, value in the definition of genera. The most important of these, and which hitherto has been overlooked, is the abortion, or great reduction in size, of the upper lip, while the lower is proportionally dilated, and, in some cases, deeply divided. Thus in *Chirita*, in which the stigma is described as bilamellar, both lamellæ belong to the lower lip. And in many species of *Didymocarpus* the apparent obliquity of stigma arises from the abortion of the upper lip, and the lamellar expansion of the lower, which, however, is never divided as in *Chirita*. In several genera the lips are equal, and either lamellar or so short as to be hardly distinguishable; in other cases there is no trace of division. These different modifications, in most cases, mark the limits of genera.

As some of the most important characters of the tribe reside in the structure of OVARIUM and PERICARPIUM, so the principal natural divisions are founded on modifications of the same organ. The ovarium may be in all cases described as properly unilocular: though, from the approximation and slight cohesion of the parallel portions of the inflected parts, or, as they are commonly called, placentæ, it not unfrequently appears to be bilocular. But this cohesion only occurs when the production of ovula is confined to the upper or inner surface of the carpel, which is the case in the greater part of the genera with elongated capsules; for where both surfaces are ovuliferous, as in the baccate and most of the genera with included capsules, no such cohesion can take place. The general direction of the margins of the placenta of each component part of ovarium and pericarpium may at first appear a deviation from the ordinary structure, the general rule being that the margins only unite to form a complete cell, whereas the completion of the cell in that manner is incompatible with the direction of these margins, which in each carpel are turned from, not towards each other. This difference, however, is more apparent than real, and the structure in *Cyrtandreæ* may be justly compared with that of such genera of other families as have the placenta of a multilocular, or that of the single distinct, carpel projecting considerably into the cavity.

The great elongation of pericarpium in many of the genera having capsular fruit, is the more remarkable in *Cyrtandreæ*, as there is no instance of similar elongation, or any approach to it, in either of the two other tribes of *Gesneriaceæ*. In this elongation of capsule, however, they approach to *Bignoniaceæ*, where it is both more general and exists in a still greater degree.

In most of the *Cyrtandreæ* with elongated capsules, the valves, though membranaceous, are perfectly straight, but in a few others they are spirally twisted, though nearly of the same texture. The spiral torsion of the valves certainly does not depend on the length of the capsule merely, the greatest length being found conjoined with straight valves, as in *Æschynanthus;* nor is it the consequence of drying, for the twisting in all cases commences long before the ripening of the fruit. The mechanism explaining these
114] differences is, however, in general obvious. In the twisted valve the endocarp consists of a stratum of vertically elongated fibres, with an extremely thin or hardly manifest

inner membrane, while in the valve of the straight capsule the vertically elongated stratum has a manifest inner covering, consisting of transversely elongated cells, which no doubt counteract the tendency to torsion of the longitudinal fibres. But the transversely elongated cells are found in the inflected or placentiferous portion of the elongated capsule, both in the twisted and straight-fruited genera; and their function here seems to be to determine the involution or revolution of the ovuliferous margin, which in these fruits is probably necessary for the protection of the seeds even after dehiscence.

The more remarkable differences in placentation are almost always important: thus, in many genera the ovula are produced on the inner surface of the margin only; in others both surfaces are equally productive: and in some, the production, instead of being confined to the marginal region, extends over the whole of the inflected and included portion of the carpel.

The SEEDS are generally pendulous, but in a few genera, as *Epithema* and *Loxocarpus*, erect; and in some others they vary in pericarpial direction, according to their different heights in the same placenta. They are always minute, generally oval, oblong, or nearly cylindrical, and inserted at or very near one extremity; in most cases sessile, or nearly so, but in a few furnished with a very long and extremely slender funiculus.

Although the ovulum is anatropous, there is no apparent raphe in the ripe seed. The capillary appendages existing in some cases at both extremities of the seed vary considerably in number and form in that genus where they are most remarkable, namely *Æschynanthus*, in which, as well as in *Agalmyla*, and probably in *Tromsdorffia*, they are mere appendages, performing no other function; but in *Lysionotus* the upper hair in the pendulous seed is in reality its funiculus or attenuated base.

The integument of the ripe seed is, in most cases, apparently simple; but in a few, especially *Æschynanthus*, the inner membrane is easily separable from the testa.

Before the complete ripening of the seed, the semifluid

remains of ALBUMEN are generally obvious; and even in the ripe seed, in several cases, slight traces of it are visible: in *Rhabdothamnus* it is more abundant, and of firmer consistence.

CYRTANDREARUM SYNOPSIS GENERUM.

A. PERICARPIUM CAPSULARE.

† *Capsulæ* elongatæ. *Semina* utrinque appendiculata.

α. *Antheræ* exsertæ, inappendiculatæ, loculis linearibus parallelis. *Semina* pendula, extremitate superiore nuclei (nec appendicis) affixa.

ÆSCHYNANTHUS. *Stamina* antherifera 4. *Stigma* indivisum, dilatatum.

TROMSDORFFIA. *Stamina* antherifera 4. *Stigma* bilamellatum.

AGALMYLA. *Stamina* antherifera 2. *Stigma* bilamellatum.

β. *Antheræ* (2) inclusæ, dorso appendiculatæ. *Semina* pendula, extremitate setæ superioris affixa.

LYSIONOTUS.

†† *Capsulæ* elongatæ. *Semina* inappendiculata, sessilia. *Antheræ* inclusæ, loculis divergentibus.

CHIRITA. *Stamina* antherifera 2. *Stigma* labio superiore obsoleto; inferiore bilamellato. *Capsula* valvis strictis (nec spiritalitèr tortis).

DIDYMOCARPUS. *Stamina* antherifera 2—4. *Stigma* indivisum (sæpè ex abortione labii superioris obliquum). *Capsula* valvis strictis.

STREPTOCARPUS. *Stamina* antherifera 2. *Capsula* valvis spiralitèr tortis. *Corollæ* tubus calyce duplò multotièsve longior.

Bæa. *Stamina* antherifera 2. *Capsula* valvis spiralitèr [115
tortis. *Corollæ* tubus calycem vix æquans.

††† *Capsulæ* calyce longiores, hinc longitudinalitèr dehiscentes. *Semina* erecta, funiculis elongatis.

Loxocarpus.

†††† *Capsulæ* subovatæ, calyce inclusæ: *placentis* utrinque seminiferis.

Epithema. *Capsula* circumscissa. *Stamina* duo superiora antherifera!

Stauranthera. *Capsula* circumscissa. *Stamina* antherifera 4. *Calyx* 5-fidus, sinubus plicatis!

Loxonia. *Stamina* antherifera 4, exserta. *Capsula* bivalvis. *Calyx* 5-partitus.

Glossanthus. *Stamina* antherifera 4, inclusa. *Calyx* 5-fidus, tubo 5-gono. *Capsula* bivalvis.

Loxotis. *Stamina* antherifera 2, inclusa. *Calyx* 5-fidus, tubo angulato. *Capsula* bivalvis.

Monophyllæa. *Stamina* antherifera 4. *Calyx* 5-partitus, æstivatione imbricatâ. *Capsula* ruptilis?

Platystemma. *Stamina* antherifera 4, exserta. *Calyx* 5-fidus, æstivatione valvatâ. *Corollæ* tubo brevissimo, limbo patenti. *Capsula*?

Rhabdothamnus. *Stamina* antherifera 4. *Corolla* tubo campanulato. *Stigma* bilobum. *Capsula* 4-valvis. *Semina* albuminosa!

B. Pericarpium Baccatum.

Fieldia. *Stamina* antherifera 4, antherarum loculis parallelis. *Calyx* 5-partitus. *Corolla* tubulosa. *Stigma* bilobum. *Bacca* exsucca.

Rhynchothecum. *Stamina* antherifera 4, antheris bivalvibus, valvulâ interiore minore. *Calyx* 5-partitus.

Centronia. *Stamina* antherifera 4, antheris basi calcaratis. *Calyx* spathaceus. *Bacca* siliquæformis.

CYRTANDRA. *Stamina* antherifera 2, inclusa, antherarum loculis parallelis. *Calyx* 5-fidus.

WHITIA. *Stamina* antherifera 2, semiexserta, antherarum loculis haud parallelis. *Calyx* 5-partitus.

ÆSCHYNANTHUS, *Jack in Linn. Trans.* 14, p. 42.

CHAR. GEN. *Calyx* 5-divisus (tubulosus v. partitus). *Corolla* bilabiata. *Stamina* antherifera 4, antherarum loculis parallelis. *Stigma* indivisum, dilatatum, sub-infundibuliforme. *Capsula* elongata, valvis strictis. *Semina* pendula, apice nuclei affixa, utrinque pilifera, pilo inferiore unico; superiore unico, duplici pluribusve.

Suffrutices *in arborum cortice radicantes*; *foliis oppositis æqualibus, integerrimis, coriaceis venis obsoletis.*

† *Calyx* tubulosus, ore 5-lobo obtuso. *Semina* utrinque monotricha, pilo superiore basi dilatatâ.

1. *Æschynanthus volubilis*, Jack, l. c. t. 2, f. 3.

2. *Æschynanthus radicans*, Jack, l. c. p. 43.

3. *Æschynanthus parvifolia*, calyce pilosiusculo sub-campanulato, foliis elliptico-lanceolatis glabris.

Loc. Banca, 1813. Dr. Horsfield.

†† *Calyx* tubulosus 5-dentatus acutus. *Semina* . . .

4. *Æschynanthus fulgens*, Wall. List, No. 797.

††† *Calyx* 5-fidus acutus. *Semina* extremitate superiore ditrichâ.

5. *Æschynanthus parasitica*, Wall. List, No. 796.

6. *Æschynanthus ramosissima*, Wall. List, No. 799, and Pl. Asiat. Rar., 1, p. 55, t. 71.

7. *Æschynanthus Griffithii*, calyce 5-partito glabro: laciniis lanceolatis, filamentis hirsutis, foliis lanceolatis.

Loc. Tavoy? D. Griffith.

†††† *Calyx* 5-partitus v. altè 5-fidus, acutus. *Semina* [116
utrinque monotricha, pilo superiore basi simplici.

8. *Æschynanthus Horsfieldii,* glabra, calyce 5-partito: laciniis lineari-lanceolatis, seminum pilis subulatis, foliis ovato-lanceolatis sub-acuminatis.

Loc. Java, an. 1814. Dr. Horsfield.

9. *Æschynanthus bracteata,* Wall. List, No. 794.

10. *Æschynanthus acuminata,* Wall. List, No. 6397.

††††† *Calyx* abbreviatus, cyathiformis, dentatus. *Semina* utrinque monotricha, pilo superiore basi dilatatâ.

11. *Æschynanthus Wallichii.*

Æschynanthus radicans, *Wall. List,* No. 798, non Jack.
Loc. Singapore.

†††††† *Calyx* . . . . *Semina* extremitate superiore comosâ, pilis indefinitè numerosis.

12. *Æschynanthus longicaulis,* Wall. List, No. 888.

TROMSDORFFIA.

Tromsdorffiæ Sp. *Blume, Bijdr.*, p. 762.

CHAR. GEN. *Calyx* 5-fidus, acutus. *Corolla* tubulosa, bilabiata. *Stamina* antherifera 4; antheris exsertis, loculis parallelis. *Stigma* bilamellatum (labiis æqualibus). *Capsula* . . . *Semina* . . .

Herba *radicans; foliis alternis dentatis.*

Tromsdorffia? elongata, Blume, Bijdr., p. 763.

AGALMYLA.

Agalmylæ Sp., *Blume, Bijdr.*, p. 766.

CHAR. GEN. *Calyx* 5-partitus, acutus. *Corolla* tubulosa, bilabiata. *Stamina* antherifera 2; antheris exsertis, loculis parallelis. *Stigma* bilamellatum (labiis æqualibus). *Capsula* elongata, valvis strictis. *Semina* pendula, apice nuclei affixa, utrinque monotricha.

Herba *radicans; foliis alternis dentatis.*

Agalmyla staminea, Blume, Bijdr., p. 767.

LYSIONOTUS, *Don, Prodr. Fl. Nepal.*, p. 124.

CHAR. GEN. *Calyx* 5-partitus, acutus. *Corolla* bilabiata, fauce bicallosa. *Stamina* antherifera 2, inclusa. *Antheræ* dorso appendiculatæ, imberbes. *Stigma* indivisum. *Capsula* elongata, valvis strictis. *Semina* utrinque in pilum producta, apice pili superioris affixa.

Herba; *foliis subverticillatis, serratis.* Inflorescentia *cymosa.*

Lysionotus serratus, Don, Prodr. Fl. Nepal., p. 124.

L. ternifolia, *Wall. Pl. Asiat. Rar.*, 2, p. 20, t. 118.

CHIRITA, *Buchan. Hamilt. in Don, Prodr. Fl. Nepal.*, p. 89.

CHAR. GEN. *Calyx* 5-fidus, æstivatione valvatâ. *Corolla* tubulosa, bilabiata. *Stamina* duo antherifera; *antheræ* (sæpius barbatæ) loculis divergentibus. *Stigma:* labio superiore abortiente v. nano; inferiore bilamellato. *Capsula* elongata, valvis strictis. *Semina* inappendiculata, pendula.

Herbæ *v.* Suffrutices; *foliis oppositis sæpius inæqualibus, altero in quibusdam nano v. abortiente; pedunculis axillaribus.*

1. *Chirita urticifolia*, foliis inæqualibus ovatis acutis serratis elongato-petiolatis, pedunculis subsolitariis medio bibracteatis, calycis laciniis subulatis, antheris imberbibus!

Chirita urticifolia, *Buchanan Hamilton MSS. in Don, Nepal.* 90.

Chirita grandiflora, *Wall. Pl. Asiat. Rar.*, 1, p. 43, t. 50

2. *Chirita flava,* Wall. List, n. 801. (*Calosacme.*) [117
Chirita pumila, *Don, Nepal.*, p. 90.

3. *Chirita acuminata,* Wall. List, n. 802. (*Calosacme.*)
Incarvillea oblongifolia, *Roxb. Ind.*, vol. 3, p. 113.

4. *Chirita dimidiata,* Wall. List, n. 803. (*Calosacme.*)

5. *Chirita bifolia,* Don, Prodr. Fl. Nepal., p. 90, Royle, Illustr., p. 294, t. 70, f. 2.

6. *Chirita macrophylla,* Wall. List, No. 805 (*Calosacme*), & Pl. Asiat. Rar., 1, p. 56, t. 72.

7. *Chirita Horsfieldii,* foliis ovato-oblongis acutis serratis scabris inæqualibus, bracteis orbiculatis calycibusque coloratis, stigmatis lamellis latioribus quam longis.
Didymocarpus barbata, *Jack, in Linn. Soc. Trans.*, 14, p. 38?
Tromsdorffia speciosa, *Blume, Bijdragen,* p. 762??
Loc. Java, an. 1814. Dr. Horsfield.

8. *Chirita scaberrima,* foliis ovatis acutis crenatis scaberrimis, stigmatis labellis longioribus quam latis.
Loc. Java orientalis. *Dr. Horsfield.*

9. *Chirita cærulea,* annua, foliis ovatis acutiusculis obsoletè dentatis subæqualibus lævibus, pedunculis apice diphyllis: foliolis reniformibus basi hinc (sæpiùs) connatis, pedicellis ebracteatis subseriatis.
Loc. Java, an. 1814. Dr. Horsfield.

10. *Chirita hamosa,* foliis oppositis subæqualibus oblongis subovatisve, pedunculo communi cum petiolo connato; pedicellis seriatis bifidis simplicibusve.
Didymocarpus? hamosa, *Wall. List,* n. 788.
Loc. Trogla in Martabania. *D. Wallich.*

DIDYMOCARPUS, *Wall. in Malay. Misc.* 1, No. 5, p. 1.

CHAR. GEN. *Calyx* 5-divisus (v. tubulosus 5-fidus, 5-partitus). *Corolla* tubulosa, bilabiata. *Stamina* antherifera 2 (raro 4) inclusa; antheris imberbibus, loculis divergentibus. *Stigma* indivisum (sæpè, ex abortione labii superioris, obliquum). *Capsula* valvis strictis. *Semina* inappendiculata, sessilia.

Herbæ *pubescentes, caulescentes vel acaules; foliis serratis crenatisve petiolatis, caulinis oppositis, verticillatis alternisve; inflorescentia subcymosa.*

CLAVIS SPECIERUM.

A. Diandræ.

† *Calyx* infundibuliformis, coloratus, tubo lobos superante, in plerisque basi transversìm secedens.

a. *Calycis* lobi rotundati. *Stigma* obliquum (unilabiatum). Bracteæ perfoliatæ, coloratæ.

1. Caulescentes.
Didymocarpus aromatica, villosa, oblonga, acuminata, punduana.

2. Acaules.
Didymocarpus macrophylla, pedicellata.

β. *Calycis* lobi acuti (glanduloso-pilosi).
Didymocarpus subalternans, obtusa.

†† *Calyx* 5-partitus acutus persistens.

a. Placentæ latitudine valvularum, marginibus ovuliferis longitudinalitèr revolutis.

1. Caulescentes.
Didymocarpus crinita, serrata, racemosa, corniculata, cordata, corchorifolia, reptans.

2. Acaules.
Didymocarpus missionis, Zeylanica.

118] *β*. Capsula hinc dehiscens, inde diù cohærens. Placentæ valvis angustiores.
Didymocarpus Rottleriana.

B. DIDYNAMÆ.

α. Caulescentes.
Didymocarpus frutescens, elongata.

β. Acaulis.
Didymocarpus lanuginosa.

SPECIERUM DIAGNOSES.

A. Diandræ. Calyce tubuloso infundibuliformi.

α. Calycis lobi rotundati.

1. *Didymocarpus aromatica,* foliis ovatis obovatisve inciso-crenatis, caule apice foliato petiolisque pube appressâ.

Didymocarpus aromatica, *Wall. Pl. Asiat. Rar.* 2, p. 34, t. 141, exclus. fig. 4—7, ad Didymocarpum macrophyllam pertinentibus.
Didymocarpus primulifolia, *Don, Nepal.*, p., 123.
Loc. Nepal.

2. *Didymocarpus villosa,* foliis obovatis inciso-crenatis adultis subsericeis, caule apice foliato petiolisque villis patulis hirsutissimo.

Didymocarpus villosa, *Don, Nepal.*, p. 123.
Loc. Nepal.

3. *Didymocarpus oblonga,* foliis oblongo-lanceolatis inciso-serratis adultis cauleque apice foliato glabriusculis.

Didymocarpus oblonga, *Wall. in litt.* 1819, *et Plant. Asiat. Rar.* vol. 2, p. 34, tab. 140. *Don, Nepal.*, p. 123.
Didymocarpus verticillata, *Wall. List,* No. 783.
Loc. Nepal.

4. *Didymocarpus Punduana,* foliis ternis caulem glabriusculum terminantibus oblongis integris, pedunculis pedicellisque pube glandulosâ conspersis.

Didymocarpus Punduana, *Wall. List,* No. 777.
Loc. Montes Sylhet.

5. *Didymocarpus acuminata*, foliis caulem terminantibus approximatis latè ovatis acuminatis duplicato-crenatis, pedicello capsulæ calycem persistentem superante.

Loc. Chura-Poongi. *Wallich.*

6. *Didymocarpus pedicellata*, acaulis, ovariis glandulosis, capsulæ pedicello calycem persistentem superante, stylo brevissimo.

Didymocarpus macrophylla, *Royle, Illustr.* p. 294, t. 70, f. 1.

Loc. Kamoon. *Royle.*

7. *Didymocarpus macrophylla*, acaulis, ovariis glandulis sessilibus conspersis, capsulæ pedicello brevissimo.

Didymocarpus macrophylla, *Wall. List*, No. 784. *Don, Nepal.* p. 122.

Didymocarpus plicata, *Don, Nepal.* p. 122.

Loc. Nepal. *Wallich.*

β. Calycis lobi acuti.

8. *Didymocarpus subalternans*, caulescens, foliis oppositis suboppositisve obtusis elongato-petiolatis.

Didymocarpus subalternans, *Wall. List*, No. 782.

Didymocarpus aromatica, *Don, Nepal.* p. 123.

Loc. Nepal. *Wallich.*

9. *Didymocarpus obtusa*, scapis subradicalibus bifoliatis, foliis radicalibus elongato-petiolatis cordato-ovatis crenatis obtusis.

Didymocarpus obtusa, *Wall. List*, No. 786.

Didymocarpus aromatica, *Don, Nepal.* p. 122.

Loc. Nepal. *Wallich.*

B. Diandræ. Calyce 5-partito acuto. Capsula utrinque simul dehiscens.

10. *Didymocarpus crinita*, Jack, in Linn. Trans., 14, p. 33, t. 2, f. 2.

Loc. Java, an. 1814. *Horsfield.* Penang. *Jack, Wallich.*

11. *Didymocarpus serrata*, foliis oppositis æqualibus [119 elliptico-lanceolatis serrulatis acutissimis: basi acutâ æquali, cymis bifidis, corollæ tubo limbum quadruplò superante.
Loc. Sumatra? *Horsfield.*

12. *Didymocarpus racemosa*, Jack, l. c., p. 34.

13. D. *corniculata*, Jack, l. c., p. 36.

14. D. *cordata*, Jack, Wall. List, No. 781.

15. D. *corchorifolia*, Wall. List, No. 792.

16. D. *reptans*, Jack, l. c. p. 35.

17. *Didymocarpus missionis*, caule brevissimo, pedunculis axillaribus scapiformibus, foliis cordato-ovatis.
Didymocarpus? missionis, *Wall. List*, No. 639.

18. *Didymocarpus Zeylanica*, sub-acaulis, scapis paucifloris, foliis orbiculato-ovatis altè cordatis dentatis petiolo longioribus, calycis laciniis linearibus acutis.
Loc. Zeylona.

C. Diandra. Calyce 5-partito acuto. Capsula hinc dehiscens inde diù cohærens.

19. *Didymocarpus Rottleriana*, Wall. List, No. 778.

D. Didynamæ.

20. *Didymocarpus frutescens*, Jack, in Linn. Soc. Trans., vol. xiv, p. 39. Wall. List, No. 780.
Loc. Penang.

21. *Didymocarpus elongata*, Jack, in Linn. Soc. Trans., vol. xiv, p. 37.
Loc. Sumatra. *Jack, Horsfield.*

22. *Didymocarpus lanuginosa*, Wall. List, No. 791.

STREPTOCARPUS, *Lindl. Bot. Regist.* 1173.

CHAR. GEN. *Calyx* 5-partitus. *Corolla* bilabiata: tubo calycem duplò multotièsve superante. *Stamina* antherifera 2, inclusa: antherarum loculis divergentibus. *Stigma* bilobum: labiis æqualibus brevissimis.

Capsula elongata valvis (dextrorsùm) spiralibus. *Semina* inappendiculata.

Herbæ *pubescentes vel caulescentes, foliis oppositis subæqualibus, inflorescentiâ cymosâ; vel caule brevissimo, folio altero nano, pedunculis seriatis.*

† Caule abbreviato; foliis oppositis, altero nano; pedunculis seriatis axillaribus.

1. *Streptocarpus Rexii*, Lindl. in Bot. Regist., t. 1173.
Didymocarpus Rexii, *Hooker in Bot. Mag.*, t. 3005.
Loc. Africa australis.

†† Caulescentes, foliis oppositis subæqualibus petiolatis. Inflorescentia axillaris subcymosa.

2. *Streptocarpus Helsingbergii*, foliis ovatis crenatis petiolo quadruplo longioribus, cymis paucifloris, corollæ tubo calycem 4—5-iès superante.
Loc. Madagascar. *Helsingberg & Bojer.*

3. *Streptocarpus Bojeri*, foliis ovatis acutis grossè et subduplicato-crenatis petiolo quadruplo longioribus, corollæ tubo calyce duplò longiore.
Loc. Madagascar. *Helsingberg & Bojer.*

4. *Streptocarpus Thompsonii*, foliis subovatis ovalibusque crenato-serratis petiolo paulò longioribus, corollæ tubo calyce duplò longiore.
Loc. Madagascar. *D. I. V. Thompson.*

5. *Streptocárpus paniculata*, foliis ovatis acutis crenato-serratis brevè petiolatis, cymis elongato-pedunculatis paniculatis.
Loc. Madagascar.

Bæa, *Commerson, in Lam. Enc. Méth.* 1, *p.* 401, *et in* [120
Juss. Gen. Plant., p. 121.

Char. Gen. *Calyx* 5-partitus. *Corolla* bilabiata tubo calycem vix æquante. *Stamina* antherifera 2, antherarum loculis divergentibus. *Stigma* obtusum (subbilobum). *Capsula* elongata, valvis (dextrorsùm) spiralibus. *Semina* inappendiculata.

Herbæ *subacaules, foliis confertis; v. caulescentes, foliis oppositis.*

1. *Bæa Commersonii,* caule abbreviato, foliis ovalibus ellipticisve obsoletè crenato-serratis petiolatis pube appressâ subsericeis, pedunculis scapiformibus uni-paucíflorisve: pedicellis calycibusque pube appressâ eglandulosâ.

Bæa Magellanica, *Lam. Enc. Méth.* i, p. 401.

Loc. "Isles Praslin," *Commerson.*

2. *Bæa hygrometrica,* acaulis, foliis ovatis obovatisve crenatis utrinque lanatis basi cuneatis subsessilibus, scapis folio longioribus apice divisis, pedicellis calycibusque pube glandulosâ patulâ.

Dorcoceras hygrometrica, *Bunge, in Mém. Acad. Imper. Sc. Petersb. Div. Sav.* tom. ii. p. 128.

Loc. China Borealis. *Bunge.*

3. *Bæa? Wallichii,* acaulis, foliis obovatis crenatis crassis, scapis apice 2—4-floris.

Didymocarpus helicteroides, *Wall. List.* No. 789.

Loc. Toong Dong. *Wallich.*

Obs. Flores nondum visi, ideoque dubii generis. Capsula *Streptocarpi* et *Bææ.*

4. *Bæa? multiflora,* caule suffruticoso, foliis oppositis petiolatis oblongis ovalibusve crenatis, paniculis axillaribus pedunculatis lanatis.

Didymocarpus? multiflora, *Wall. List,* No. 793.

Loc. Sylhet in montibus Punduah.

Obs. Flores inexpansi solùm a nobis visi: tubo brevi corollæ ni fallor cum Bæa convenit sed habitus diversissimus.

LOXOCARPUS.

CHAR. GEN. *Calyx* 5-partitus. *Corolla* tubo brevi. *Stamina* antherifera duo, antherarum loculis divergentibus. *Stigma* indivisum. *Capsula* calyce (paulò) longior, hinc dehiscens, placentis angustissimis. *Semina* erecta, funiculis capillaribus elongatis.

Herba *annua, incana; foliis omnibus radicalibus petiolatis.* Scapi *apice subcorymbosi.*

Loxocarpus incana.

Loxonia? alata. *Wall. List, No.* 809.

Loc. Penang.

EPITHEMA, *Blume, Bijdrag. p.* 737.

Aikinia, *Br. in Wall. Pl. Asiat. Rar.* 3, *p.* 65, *t.* 288.

CHAR. GEN. *Calyx* tubulosus 5-fidus. *Corolla* bilabiata. *Stamina* duo superiora antherifera! *Stigma* indivisum. *Capsula* calyce cincta, circumscissa; placentis liberis, utrinque seminiferis, pedicellis parietalibus adnatis. *Semina* erecta, funiculis elongatis.

Herbæ *annuæ, pilosiusculæ.* Folia *cordata, subdentata, inferiora, dum uno plura, alterna, terminalia subopposita.* Spicæ *unilaterales, circinales; hinc pedicellis subduplici serie confertis ebracteolatis, inde foliolo cucullato subrotundo involucratæ.*

STAURANTHERA, *Bentham in Scrophul. Ind.*, p. 57.

CHAR. GEN. *Calyx* turbinato-campanulatus, 5-fidus, sinubus plicatis (quandoque in dentibus productis). *Corolla* subrotata, bilabiata, 5-loba; tubo nunc basi calcarato. *Stamina* antherifera 4; antheræ in coronulam conniventes, loculis divaricatis. *Stigma* .... *Capsula* calyce persistente cincta, circumscissa; placentis utrinque seminiferis.

Herba *oppositifolia, folio altero nano stipuliformi.*

1. *Stauranthera grandifolia,* corollæ tubo basi calcarato, calycis sinubus in dentibus productis. [121
Stauranthera grandifolia, *Benth. Scrophul. Ind.*, p. 57.
Glossanthus? grandiflora, *Benth. in Wall. List,* No. 6395.
Loc. Penang.

2. *Stauranthera ecalcarata,* corollæ tubo ecalcarato.
Miquelia cœrulea, *Blume in Bullet. des Sc. Phys. et Nat. en Neerlande, an.* 1838, p. 94.
Loc. Java. *Dr. Horsfield.*

GLOSSANTHUS, *Klein in Wall. List,* No. 6394.

CHAR. GEN. *Calyx* 5-fidus, tubo 5-gono angulis marginatis, laciniis parùm inæqualibus; æstivatione valvata. *Corolla* personata; labium superius abbreviatum bilobum; inferius indivisum (lobis lateralibus abortientibus). *Stamina* antherifera 4 inclusa, antheris in coronulam cohærentibus. *Stigma* indivisum. *Ovarium* disco completo cinctum. *Capsula* calyce inclusa, bivalvis, placentis utrinque seminiferis.

Herbæ *alternifoliæ, glabriusculæ; foliis integris basi altè excisis; racemis secundis.*

1. *Glossanthus malabarica,* Klein in Wall. List, No. 6394. Benth Scrophul. Ind., p. 57.

2. *Glossanthus Notoniana.*
Wulfenia Notoniana, *Wall. Tent. Flor. Nepal.*, p. 46; *List,* No. 409.

3. *Glossanthus Zeylanica.*

4. *Glossanthus Mexicana,* R. Br.
Klugia azurea, *Schlecht. in Linn.*, 8, p. 248.

MONOPHYLLÆA.

CHAR. GEN. *Calyx* 5-partitus, laciniis ovatis; æstivatione imbricata. *Corolla* bilabiata: labio superiore bilobo; inferiore trilobo. *Stamina* antherifera 4, antherarum loculis divergentibus. *Ovarium* disco dimidiato basi instructum. *Stigma* indivisum? *Capsula* calyce tecta, ruptilis? semibilocularis.

Herba *glabra.* Folium *unicum caulem simplicissimum terminans, sessile, costatum, integrum;* racemi *corymbosi, subseriati, ex ipsâ basi folii.*

Monophyllæa Horsfieldii.

Loc. Sumatra. *Dr. Horsfield.*

PLATYSTEMMA, *Wall. Pl. Asiat.*, 2, p. 42, t. 151.

CHAR. GEN. *Calyx* altè 5-fidus; æstivatione valvatâ. *Corolla* tubo brevissimo, limbo bilabiato patenti: labio superiore bilobo; inferiore trifido. *Stamina* antherifera 4, exserta, antherarum loculis divergentibus. *Ovarium* disco annulari basi cinctum, placentis utrinque ovuliferis. *Stigma* indivisum. *Capsula* . . . ?

Herba *pubescens; caule simplicissimo terminato folio unico inciso-crenato, quandoque cum altero nano stipuliformi; racemo terminali unico paucifloro.*

RHABDOTHAMNUS, *Cunningh. in Ann. Nat. Hist.*, 1, p. 460.

CHAR. GEN. *Calyx* altè 5-fidus. *Corolla* tubo campanulato, limbo bilabiato. *Stamina* antherifera 4, exserta, antheris in coronulam cohærentibus, loculis divaricatis. *Stigma* . . . *Capsula* demùm 4-valvis, placentis utrinque seminiferis. *Semina* albuminosa.

Frutex *ramosissimus oppositifolius.*

Rhabdothamnus Solandri, Cunningh., l. c.

Loc. Nova Zelandia. 1769, *J. Banks & Solander*, 1826, *Cunningham.*

122] Fieldia, *Cunningh. in Field's Mem. N. S. Wales*, p. 363.

Char. Gen. *Calyx* 5-partitus. *Corolla* tubulosa. *Stamina* antherifera 4, antherarum loculis parallelis. *Stigma* bilobum. *Bacca* subexsucca.

Suffrutex *oppositifolius.*

Fieldia australis, *Cunningh. l. c.* p. 364, *cum. tab.*

Rhynchothecum, *Blume Bijdr.*, p. 775.

Corysanthera, *Wall. List.*, *No.* 6411.

Char. Gen. *Calyx* 5-partitus. *Corolla* bilabiata, tubo brevi. *Stamina* antherifera 4, inclusa; *antheræ*, loculis confluentibus, bivalves, valvulâ interiore minore. *Bacca* calyce cincta.

Suffrutices *oppositifolii, fasciculis paniculisve axillaribus.*

Centronia, *Blume Bijdr.*, p. 776.

Char. Gen. *Calyx* spathaceus, hinc fissus. *Corolla* infundibuliformis, limbo bilabiato patenti. *Stamina* antherifera 4 inclusa; antheræ uniloculares, dorso ad basin calcaratæ, liberæ. *Stigma* capitatum. *Bacca* siliquæformis; placentæ carnosæ, lobis revolutis seminiferis.

Herba *carnosa in radicibus arborum parasitica aphylla; scapis squamatis.*

Obs. Character ex D. Blume qui ad hanc familiam retulit plantam *Æginetiæ* forsan affiniorem.

Centronia mirabilis, Blume, Bijdr., p. 777.

Cyrtandra, *Forst. Gen.*, t. 3.

Getonia, *Banks et Soland. MSS.*

Char. Gen. *Calyx* 5-fidus. *Corolla* infundibuliformis, bilabiata. *Stamina* antherifera 4, 2, inclusa, antherarum loculis parallelis. *Stigma* bilobum. *Bacca* placentis revolutis undique seminiferis.

WHITIA, *Blume, Bijdr.*, p. 774.

CHAR. GEN. *Calyx* 5-partitus. *Corolla* infundibuliformis, bilabiata. *Stamina* antherifera 2 semiexserta, antherarum loculis haud parallelis. *Stigma* infundibuliforme. *Bacca* siliquæformis.

Frutices (*Javanicæ*) *radicantes; foliis oppositis integerrimis inæqualibus inæquilateris; inflorescentiâ axillari fasciculatâ.*

Obs. Character a D. Blume.

PTEROCYMBIUM JAVANICUM. [219

Tab. XLV.

Char. Gen. *Flores* polygamo-monoici (ferè hermaphroditi). *Calyx* 5-fidus, patens. *Antheræ* (10) simplici serie; loculis omnibus parallelis. *Ovaria* disperma. *Stigmata* filiformia, recurvata. *Pericarpia: Folliculi* foliacei, naviculares, longè ante maturitatem aperientes. *Semen* unicum, albuminosum. *Embryonis Radicula* hilo proxima.

Arbor, foliis *lobatis indivisisve;* paniculis *subterminalibus.*

Obs. Genus *Sterculiacearum* Scaphio proximum et forsan nimis affine. *Scaphium* verò differt: *Antheris* (15—20) congestis; *stylis* arctè cohærentibus; *stigmatibus* coalitis, unicum lobato-capitatum efformantibus.

Descr.—Arbor sylvestris, 50—60-pedalis; trunco modicè crasso, cortice lævi, rufescenti-fusco; comâ patenti (*D. Horsfield*). Folia alterna, 5—3-loba, passim indivisa, circumscriptione latè ovata, basi cordata 5-nervia, lobis ellipticis brevè acuminatis, sinubus obtusis; dum indivisa, paulò altiùs cordata, 3—5-nervia, brevissimè acuminata: omnium adulta supèr glabra præter nervos venasque primarias tenuissimè pubescentes, pube simplici: subtèr pube simili magis copiosâ, præsertim in nervis venisque ferè omnibus et insuper, rariore tamen et tenuiore, per totam paginam: novella utrinque pube stellari copiosâ tecta. Petioli teretiusculi, undique pubescentes, anticè sulco tenui exarati, basi apiceque pululùm incrassati, quandoque folia subæquantes, sæpiùs dimidio et ultrà breviores. Stipulæ laterales, subulatæ, caducæ. Panicula subterminalis, e racemis alternis approximatis subcorymbosis. Pedicelli extra medium articulati, ipso articulo constricto, inter dilatationes duas manifestas. Bracteæ omnes deciduæ v. caducæ. Calyx monophyllus, ad medium quinquefidus, æqualis, turbinato-canpanulatus, coriaceus, glaber, laciniis tomento minutissimo cinereo marginatis, immersè nervosus venisque anastomosantibus, latè semilanceolatis; æstivatione valvatâ, alabastro 5-gono, turbinato; tubo intùs basi corpusculis scobiformibus minutis densissimè tecto. Corolla nulla. Flores hermaphroditi vel polygamo-monoici. Hermaphrodito-*Masculi*: Columna genitalium (gynostemium) e basi parùm dilatatâ cylindracea; dimidio inferiore breviore, pube tenuissimâ simplici patenti; superiore glabro, apice parùm dilatato (staminibus occultato) in urceolum decem- v. octo-dentatum antheriferum. Antheræ 10 v. 8 220] simplici serie dispositæ, incumbentes, supra medium affixæ; loculis appositis, contiguis, linearibus, longitudinaliter dehiscentibus. Pollen læve, subovale. Pistilla omnibus punctis ferè ut in Femineis. Hermaphrodito-*Feminei*: Columna quandoque brevissima. Antheræ ut in masculis numero et dispositione, polline forsan effœto. Ovaria 5 (raró 6) ipso apice columnæ insidentia, sessilia, arctè approximata, distincta tamen, dorsi apice gibboso, ita ut stylus quasi lateralis evadit, disperma; ovulis collateralibus erectis anatropis. Styli 5—6, arctè approximati, leviter cohærentes, breves. Stigmata filiformia, recurvata, intus longitudinaliter papulosa. Pericarpia 5—6, aliqua sæpè abortientia, follicularia, singula stipiti filiformi pubescenti insidentia; stipite communi 5-angulato, vix longitudine calycis diù persistentis haud mutati. Folliculi citò post fœcundationem et longè ante seminis maturitatem aperientes, foliacei, reticulato-venosi, naviculares; dimidio inferiore duplò profundiore ibique carinâ in lobulum obtusum productâ, superiore planiusculo. Semen unicum maturescens, exsertum, basin folliculi occupans, erectum, basi insertum, sphæricum, læve, tenuissimè pubescens pube simplici. Integumentum triplex; *extimum* crustaceo-membranaceum, latere interiore, respectu axeos communis folliculorum, lineâ parùm elevatâ ab hilo ad apicem ductâ raphem indicante insignitum, superficie interiore præter raphem venis per alterum latus recurrentibus ad basin tendentibus, ramo crassiore raphi opposito; inter hocce integumentum (v. epidermidem testæ) et medium substantia adest parca subfloccosa: *medium* (endospermium) nucamentaceum,

apice extus areolâ circulari (chalazâ) insignitum: *intimum* (integumentum interius) membranaceum. Albumen nucleo conforme, bipartibile, amygdalinum, album. Embryo erectus, ferè longitudine seminis, albus. Cotyledones latitudine albuminis idque bipartientes, foliaceæ: Radicula hilo proxima, brevis, subovata.

Pterocymbium javanicum, according to Dr. Horsfield, grows scattered among other trees in the luxuriant forests which, at a small elevation above the sea, cover many of the plains in the central and eastern districts of Java.

The native name is *Wining* or *Kemoonoong.*

Tab. XLV. *Fig.* 1. A branch bearing leaves. *Fig.* 2. A portion of the panicle, bearing ripe fruits. *Fig.* 3. An unexpanded flower. *Fig.* 4. The same, slightly magnified, opened longitudinally, the sexual organs being at that period sessile and the anthers closed. *Fig.* 5. An anther seen in front. *Fig.* 6. The same, seen from behind. *Fig.* 7. The column thickened at top, which in *Fig.* 8 is seen divided into ten teeth. *Fig.* 9. One of the pistilla, cut longitudinally to show the two erect collateral ovula. *Fig.* 10. The half of an expanded flower, in which the column is elongated. *Fig.* 11. The base of a carpel, with its single seed. *Fig.* 12. The seed, deprived of its outer integument. *Fig.* 13. The same, after the removal of the inner integument. *Figs.* 14 and 15. The embryo, with its bipartite albumen.

Sterculiaceæ, to which *Pterocymbium* evidently belongs, was first proposed as a distinct natural family by Ventenat in 1804;[1] his only character separating it from *Malvaceæ* being the presence of albumen surrounding the embryo, and from *Tiliaceæ* its monadelphous stamina.

In 1814,[2] in suggesting the formation of Natural Classes of plants and proposing *Malvaceæ* as one of these classes, I referred *Sterculiaceæ* to it, but regarded the order as more limited than Ventenat appears to have done; considering it as sufficiently distinct from *Buttneriaceæ*, to great part of which, however, Ventenat's two principal characters of *Sterculiaceæ* equally belong.

---

[1] '*Hort. Malmais,*' fol. 91.

[2] 'Appendix to Capt. Flinders's Voyage to Terra Australis,' vol. ii. p. 540 [*vol.* i. *p.* 11].

221] In endeavouring to establish the characters and affinities of *Pterocymbium*, it became necessary to examine those of the established genera most nearly related to it, and as this examination has led me to adopt considerable alterations in arrangement, and enabled me to make some additions to the number of species, I shall here give the characters of the genera and species of that tribe to which the name of *Sterculieæ* has been applied by DeCandolle and Endlicher, prefacing that account with a history of the tribe, and especially of the genus *Sterculia*, from its formation to the present time.

In the botanical history of *Sterculia*, it is not necessary to go farther back than 1747, when Linnæus first published his character of the genus,[1] founded on the specimens and unpublished figures of Hermannus, whose Ceylon herbarium, of which the Museum Zeylanicum is a catalogue, had been sent from Copenhagen for his inspection. The result of a careful examination of this herbarium was the publication in 1748 of the 'Flora Zeylanica.'

Hermann's herbarium (purchased by Sir Joseph Banks and now in the British Museum) contained flowering specimens of *Sterculia fœtida* and *Balanghas*, and the fruits of both species were figured by Hermann himself in the volume of drawings which accompanied the herbarium. From these materials, confirmed no doubt by the figures of the fruits in 'Hortus Malabaricus' and 'Herbarium Amboinense,' the Linnean genus was entirely established. The character given, however, is strictly applicable to *Sterculia fœtida* only; and Linnæus was probably induced to refer *Balanghas* to the same genus, either from not having distinctly seen the remarkable form of the flower in that species, or, which is more likely, disregarding that difference, was determined by the exact resemblance in its fruit to that of *S. fœtida*, both being figured in the volume of drawings already referred to. These were the only materials he appears ever to have examined, and his own herbarium contained absolutely nothing except a single leaf of *S. fœtida:* the generic character consequently remains unchanged in all his subsequent works.

---

[1] '*Nova Genera Plantarum, respondente Dassow*,' p. 13.

In 'Flora Zeylanica,' Linnæus correctly includes *Sterculia* in his Class *Monœcia,* notices the imperfect stamina in the female flower, and only overlooks the minute rudiments of ovaria in the male flower. He referred the genus to his Natural Order *Tricoccæ* (very nearly corresponding with the *Euphorbiaceæ* of Jussieu), as appears first in 'Philosophia Botanica,' published in 1751, and afterwards in the sixth edition of his 'Genera Plantarum' in 1764. In this determination of its affinity he was followed by Bernard de Jussieu in 1759, by Adanson in 1763; and in a manuscript list of the arrangement of plants adopted in 1779 in the Paris Garden, I find *Sterculia* still placed in the same family. The generic character of *Sterculia,* as given by Linnæus, who does not notice, and had no opportunity of ascertaining the structure of the seed, might with very slight alteration stand for that of the whole tribe, *Heritiera* alone excepted.

In the order of time, the next work in which the same genus is described, though under a different name, is Aublet's 'History of the Plants of French Guiana,'[1] which appeared in 1775. He describes his genus *Ivira,* which all subsequent botanists have referred to *Sterculia,* as having hermaphrodite flowers, with ten stamina, and the capsules or follicles surrounded at the base with rigid filiform processes, formed as he states by the enlargement of the hairs which according to him exist in the flowering state. But from an examination of the specimens in his own herbarium (purchased by Sir Joseph Banks and now in the British Museum), as well as from others collected in the same country by the late celebrated Professor Richard, it appears that the flowers are unisexual; that the hairs of the urceolus antherarum which Aublet describes, and which, as he states, by their enlargement form the mass of rigid processes surrounding the ripe fruit, have no existence; and that this singular appendage to the fruit is an accidental structure or monstrosity, probably of rare occurrence, of which I have found a single specimen among the loose fruits of his herbarium.

---

[1] p. 695, t. 279.

In 1775 also was published the 'Flora Ægyptiaco-Arabica' of Forskael, who describes a supposed new genus, *Culhamia*,[1] which is no doubt a species of *Sterculia*, certainly, however, not *platanifolia* as Vahl affirms, but 222] perhaps either *S. tomentosa* of the 'Flora Senegambiæ,' or the nearly related species *abyssinica*. *Culhamia* is described as having hermaphrodite flowers, and it is stated that the style, which is originally concealed by the stamina, only becomes visible after the expansion of the flower, so that here we have the same account of structure and gradual development of pistillum which was afterwards given by Cavanilles and adopted by de Jussieu.

In 1786, in the first volume of the 'Acta Acad. Patavin,'[2] Marsili proposed a new genus related to *Sterculia*, and formed of *St. platanifolia* of the 'Supplementum Plantarum' of the younger Linnæus.

In 1788 Cavanilles published his fifth dissertation on Monadelphous plants, in which *Sterculia*[3] appears with its characters considerably modified, *Ivira* of Aublet being included in it, and some additional species described. He refers the genus to *Monadelphia*, states the flowers to be hermaphrodite, and accounts for their unisexual appearance by assuming the gradual and more tardy development of the female organ; he also describes the stigma as either bifid or with five rays, the supposed existence of the bifid stigma being founded on an error in the drawing of *S. platanifolia* by Mlle. Basseporte, from which his engraving is copied.

In 1789 the immortal work of A. L. de Jussieu appeared. *Sterculia* is there[4] for the first time correctly

[1] p. 96. [2] p. 106. [3] p. 284. [4] p. 278.

referred to the Natural Order *Malvaceæ* as then understood: the generic characters, however, are stated to be taken from Aublet and Cavanilles. The erroneous assertion of the latter that the flowers are hermaphrodite, and his account of the gradual development of pistillum are adopted, and finally Jussieu expresses a doubt whether the embryo is corrugated, which he describes it to be in all the other genera of the same section of *Malvaceæ*, and which he considers as one of the principal characters of that Natural Order.

In Schreber's edition of the 'Genera Plantarum'[1] of Linnæus, published the same year, *Sterculia* is referred to *Dodecandria*, and the few changes made in the character are apparently taken from Cavanilles, and among these is the *stigma bifidum*.

In 1789 also Dryander, in the first edition of 'Hortus Kewensis,' established, partly from the manuscripts of J. G. Kœnig, the genus *Heritiera*,[2] which he justly places next to *Sterculia*, and refers both to *Monœcia Monadelphia*.

Neither in Willdenow's edition of the 'Species Plantarum' of Linnæus, nor in Persoon's 'Synopsis' is any important alteration made in the character of the genus, which, following Schreber, is referred by Willdenow to *Dodecandria*, and by Persoon to *Monadelphia*.

In 1804 Ventenat, in his 'Jardin de la Malmaison,'[3] gives a considerably altered, and in most respects improved character of *Sterculia*, of which with some other genera of *Malvaceæ*, and the first section of Jussieu's *Tiliaceæ*, he proposes to form a new Natural Order, *Sterculiaceæ*, his principal distinguishing character of which has been already mentioned. He refers the genus to *Monadelphia Dodecandria* of the Linnean system for no very sufficient reason, namely the existence of the rudiments of the other sex in both the male and female flowers. He is the first to notice the *albumen bipartibile* and *radicula embryonis umbilico opposita* or *contraria*, both of which he introduces into the character of the genus. Besides these improvements in the account of the genus, he has given the distinguishing characters of several new species.

---

[1] p. 324.

[2] Vol. iii. p. 546.

[3] Vol. ii. fol. 91.

In 1805 M. Palisot de Beauvois, in his 'Flore d'Oware et de Benin,'[1] in describing his *Sterculia acuminata*, introduces several alterations into his character of the genus, most of which belong only to the species he has there described, and some of which may be considered of generic importance, especially the remarkable structure of antheræ.

In 1806 Salisbury proposes a new genus, *Southwellia*, formed of all such species of *Sterculia* as have the segments of the calyx connivent with cohering apices; this being the only character distinguishing it from the rest of the genus.

In the same year Poiret, in the article *Sterculia* of the Botanical Dictionary of the 'Encyclopédie Méthodique,'[2]
223] considers the flowers as hermaphrodite, and adopts the explanation given by Forskael, Cavanilles and de Jussieu. In his generic character there is no improvement; but he suggests the probable expediency of afterwards dividing the genus, when the structure of the various plants referred to it is better known.

In 1819 Sir James (then Dr.) Smith, in Rees's 'Cyclopedia,' in his account of *Sterculia*, takes no notice of the structure of seed, and is inclined to agree with Schreber and Willdenow in referring it to *Dodecandria*. If the genus should be hereafter subdivided, he seems more disposed to trust to differences in the styles and stigmata than to those very remarkable modifications of fruit, with some of which he was acquainted, believing them not to be supported by other characters, and in proof of this instancing *St. platanifolia* and *colorata*, so similar in fruit, and so unlike each other in the form of the flower.

In 1824 DeCandolle, in the first volume of his 'Prodromus,' forms a tribe which he calls *Sterculieæ*, consisting of *Sterculia* and *Heritiera*, referring it to *Buttneriaceæ*. The

[1] Vol. i. p. 40.

[2] Vol. vii. p. 428.

most remarkable circumstance in his character of *Sterculieæ*, is his describing the embryo as erect, which, if I rightly interpret his meaning, although applicable to a few species, is directly contrary to the more usual structure. *Sterculia* as a genus he distinguishes from *Heritiera* by the existence of albumen, which, however, is not universally present, and dehiscence of the follicles; the direction of embryo is not noticed in his characters of either of these two genera.

In 1827 M. Auguste de St. Hilaire, in the 'Plantes Usuelles des Brasiliens,' gives, appended to his account of a supposed new species of *Sterculia*, an improved character of the genus, though in this character he describes the albumen as a coat of the seed; the "embryon antitrope" is considered as common to the whole genus. In the remarks that follow he supports Linnæus's account of his classification of the genus, in opposition to the observations of Jussieu which he refers to, but which he does not seem to be aware were adopted from Cavanilles, and perhaps also from Forskael, with whom a similar account originated.

In the same year he published a Livraison of his 'Flora Brasiliæ Meridionalis,' in which work, as in the 'Plantes Usuelles,' owing to the state of his health, he was assisted by MM. Adrien de Jussieu and Cambessèdes. In the 'Flora Brasiliæ'[1] an enlarged, and in many respects improved character is given of *Sterculia*, of which the principal difference from that in the 'Plantes Usuelles' is, his admitting the existence of albumen divided into two equal segments, which, he correctly states, frequently cohere with the corresponding cotyledons, the first distinct notice I believe of that remarkable economy: he states also, that where the seeds are ascendent, the radicle of the embryo points to the hilum, and where they are transverse, in the diametrically opposite direction. His character, therefore, of the genus is so framed as to include every species of *Sterculia* of DeCandolle, as far as the author was acquainted with their structure. It will hereafter appear, however, that neither is the existence of albumen universal, nor is the direction of the embryo dependent on that of the seed, even in the carpella of all the species then published.

---

[1] Vol. i. p. 277.

In 1831, in the 'Flore de Sénégambie,' the joint work of MM. Guillemin, Perrottet and Richard, a new point is introduced into the character of *Sterculia*,[1] namely an incomplete arillus, which, however, if it really exists in any case, is probably to be found in one species only, namely, *Sterculia cordifolia*: in all the other species which I have examined, there is either only a minute *caruncula umbilicalis* or *strophiola*, as in *St. fœtida*, or more generally no trace whatever of this appendage.

In 1832, in the 'Meletemata Botanica' of Schott and Endlicher, the Natural Order *Sterculiaceæ* is divided into three principal tribes—*Bombaceæ*, *Helictereæ*, and *Sterculieæ*. This last tribe, as in DeCandolle's 'Prodromus,' is limited to the genera *Sterculia* and *Heritiera*. But *Sterculia* is divided into twelve genera, chiefly from modifications of the flower, or from the texture and period of dehiscence of the folliculi, and in one case from the seed being winged; no modification of internal structure of seed being introduced into any of the characters.

In the same year, the third volume of Dr. Roxburgh's 'Flora Indica' was printed at Calcutta. In this valuable work such a generic character of *Sterculia*[2] is given as to comprehend all the Indian species, and indeed so constructed as to include all that are now known, except 224] *Courtenia*, a new genus of the present essay; and even that would be excluded only from its generally having double the usual number of ovaria. Several new species are well described in the work, and the direction of embryo noticed in most of them; the only species in which the radicle is described as pointing to the umbilicus being his *Sterculia alata*.

In 1840 Professor Endlicher, in the 13th part of his 'Genera Plantarum,' modifies the arrangement of the Linnean genus *Sterculia* given in the 'Meletemata,' all the genera there established, except his *Pterygota* (the *St. alata* of Roxburgh), being considered as only subgenera of *Sterculia,* of which the principal characters distinguishing it from *Pterygota* are, as he states, orthotropous ovula and embryo either antitropous or parallel to the umbilicus. It would seem that these distinctions were adopted chiefly from the facts stated in the 'Flora Indica' of Dr. Roxburgh, and in part also perhaps from the generic character of *Sterculia* given in the 'Flora Brasiliæ.'

---

[1] Vol. i. p. 79.

[2] p. 144.

In 1841 the same arrangement and characters are given in his 'Enchiridion.'

Before proceeding to the description and characters of *Sterculieæ,* I have to make a few preliminary observations, chiefly on the relative importance of the different organs in the formation of genera.

In the general description of the tribe, I have enclosed in brackets such exceptions to the more usual structure as I believe to be in most cases of generic value.

The ordinary structure follows separately; no notice being taken of the exceptions, which are numerous, and such parts of the general description being excluded as are of least importance, and it may be remarked that this character is but little different from that of the genus *Sterculia.*

I then give the few characters to which hitherto no exception has been found.

The direction of *Embryo* with relation to the insertion or umbilicus of the seed appears to be by far the most important character, or that which is best supported by other modifications of structure; and it is worthy of remark, that in this point the ordinary direction of the embryo in the tribe, namely the radicle seated at the opposite extremity or apex of the seed, is itself a deviation from the more usual structure of Phænogamous plants, and an exception not only to the other tribes of *Sterculiaceæ,* but to the whole of the Natural Class *Malvaceæ,* to which that order belongs; and it becomes still more remarkable in regard to the state of the unimpregnated ovulum, which I have some reason to believe is not orthotropous as might be expected, and as it has been described, but apparently anatropous, and that perhaps in the whole tribe. As, however, my observations on this subject are entirely made from the macerated ovaria of dried specimens, the statement here made must be received as requiring confirmation from the examination of living plants, and of a greater number of species.[1]

From this ordinary direction of embryo in the tribe, the deviations are of two kinds: the first, and no doubt the more important, is that in which the radicle is placed at a point close to the umbilicus, which is the most general structure in Phænogamous plants; but as it never points directly within the umbilicus, either in this or any other family, I have modified the expression generally employed in such cases. The second deviation is where the umbilicus is placed on or near the middle of the ripe seed with the radicle pointing to its lower extremity; in other words, where the embryo is parallel to the umbilicus. But this position of umbilicus of the ripe seed does not necessarily imply an exactly similar insertion in the unimpregnated ovulum; and in this tribe I am inclined to believe that in many cases the foramen of the ovulum is so close to the 225] umbilicus as to appear anatropous, and that it ultimately becomes more distant from the unequal growth of the opposite extremities of the seed.

The exceptions to the ordinary structure in *Sterculieæ* which appear to be next in importance are the modifications in texture, and especially in the period of dehiscence of the seed-vessel or carpel, or even its nondehiscence, for in this respect the tribe admits of the two extremes. In the first, where the carpel opens long before the ripening of the seed, its texture is always foliaceous, and the embryo may be either transverse, that is, having its radicle distant from the umbilicus, or approximated to it.

---

[1] The species of *Sterculia* with orthotropous embryo in which I have found this unexpected position of foramen in the unimpregnated ovulum, are *fœtida*, *guttata*, *carthaginensis*, *nobilis*, and *angustifolia*; and in the ripe seeds of *tragacanthæ*, *urens*, *villosa*, and *quadrifida*, an indication of a lateral foramen near the base is still visible, but which in *fœtida* I have not been able to detect.

The want of *Albumen* in this tribe is also a character of considerable value, but its absence is not quite so frequent as has been supposed, there being some room for doubt where its union with the cotyledons is most intimate.

The deviations from ordinary arrangement of the *Antheræ* may be considered as next in value to those already enumerated; of these modifications, that of the greatest importance is where the antheræ are disposed in a simple series and equidistant; this occurs I believe only when they are ten in number, or in the very rare case where they are reduced to five; the mere number, where they are not equidistant nor closely approximated, seems to be of much less importance.

The degrees of development of stamina in the female flower can never be employed in the formation of genera: in several, perhaps in many cases, the antheræ contain pollen, but, on comparing it with that of the male flower, I am disposed to believe it to be imperfect or effete. It would seem at first sight, that, in the numerous cases where the style is deflected, the stigmata are so closely approximated to the antheræ, that impregnation by their pollen is at least probable; but by this deflection of style the stigmata are equally exposed to the influence of the antheræ of the male flowers, which are generally lateral, while the female is terminal, the exposure being nearly equal, whether the inflorescence is pendulous or erect.

The modifications of calyx in *Sterculieæ,* especially in the depth of division and direction of its segments, have hardly more than specific or sectional value; and even those processes which occur in several species, either in the segments or tube, seem to be of no greater importance. The most remarkable anomaly of all is the induplicate æstivation found in a single species belonging to New Holland and in *Sterculia villosa* of Roxburgh. This mode of æstivation readily passes into the valvular in the corolla of several families, and is therefore of no great weight.

It is singular that so great a difference as that between

simple and compound leaves should in this tribe be unconnected with other characters, and the very few plants in which compound leaves occur differ widely from each other in the form of their flowers or direction of their segments.

STERCULIEÆ.

DESC. TRIBUS.—*Flores* diclines, monoici, *Masculi* cum rudimento, sæpiùs minuto et antheris occultato, pistilli: raró stigmatibus ovulisque ferè ut in femineis. *Feminei* antheris manifestis sæpè donatis polline sed semper effœto. *Calyx* monophyllus, 5-fidus, nunc 5-partitus, raró 4- v. 6-fidus, æqualis, coloratus; æstivatione valvatâ rarissimè induplicatâ; deciduus, quandoque marcescens. *Corolla* nulla. *Gynostemium*, columna genitalia sustinens, calyce breviùs v. longiùs raró abbreviatum ferè nullum, in cujus apice *Antheræ* subsessiles quindecim, nunc decem, quandoque viginti (raró quinque) urceolum abbreviatum cyathiformem rarissimè tubulosum terminantes, in capitulum inordinatim congestæ, v. in fasciculos quinque cum ovariis alternantes polyadelphæ (nunc dum decem v. quinque, sæpiùs in serie simplici dispositæ); biloculares, loculis distinctis, parallelis (raró divaricatis). *Pollen* simplex, læve, sphæroideum. *Ovaria* 5, raró 4 v. 6 (rarissimè 10—12), leviter cohærentia, polysperma (nunc tetra- v. disperma, raró monosperma). *Ovula* angulo interno ovarii, dum inde- 226] finita duplici raró quadruplici serie, inserta. *Styli* tot quot ovaria, coaliti v. arctè approximati, et tunc sæpè arctè deflexi (nunc ad basin ferè distincti, quandoque nulli). *Stigmata* in unicum subcapitatum quinquelobum cohærentia, v. distincta subcylindracea indivisa. *Pericarpia: Folliculi* coriacei v. lignei (raró submembranacei) haùd ante maturitatem seminum dehiscentes (in nonnullis in quibus ovula definita (2 v. 4) citò post fæcundationem aperientes, foliacei) (raró clausi, nucamentacei). *Semina* aptera rarissime apice alata), umbilico sæpè omninò nudo, quandoque strophiolâ parvâ, rarissimè si unquam? arillo carnoso incompleto? aucto. *Integumentum* triplex (in exalbuminosis simplex:

dum triplex *extimum*, quasi testæ lamina exterior, tenue, crustaceum, superficie interiore sæpiùs vasculosâ, inter hoc et medium substantia laxè cellulosa vel stuposa v. pulverea sæpè obvia; *medium*, quasi testæ lamina interna, cartilagineo-nucamentaceum, evasculosum semper; *intimum* membranaceum, quandoque evanidum. *Albumen* amygdalino-carnosum, album, bipartibile! segmenta sæpiùs cotyledonibus cohærentia, in quibusdam cum iisdem conferruminata, et texturâ v. colore paullò diverso tantùm indicata quandoque nullum. *Embryo* dicotyledoneus, albus, longitudine albuminis, antitropus (nunc orthotropus v. transversus). Cotyledones in albuminosis latitudine albuminis et sæpiùs foliaceæ (in exalbuminosis semper carnosæ). *Radicula* v. hilo contraria et centrifuga (v. approximata et centripeta, v. transversa et infera). *Plumula* parva sed manifesta.—Arbores *intra tropica sæpiùs provenientes, et tamen omnes foliis deciduis.* Folia *alterna, petiolata, simplicia, indivisa v. lobata, rarò digitato-composita, foliolis cum petiolo articulatis: omnia pube sæpissimè stellatâ, in quibusdam nullâ, presertim in paginâ superiore, v. in adultis deciduâ.* Petiolus *teretiusculus, basi et apice paullò incrassatis.* Stipulæ *laterales, distinctæ, plerumque subulatæ et caducæ.* Inflorescentia *sæpiùs paniculata v. racemosa, pendula, quandoque fasciculis axillaribus v. rameis erectis:* bracteolis *caducis pedicellis medio v. juxta apicem articulatis.*

CHAR. ORDINARIUS TRIBUS. *Flores* polygamo-monoici. *Calyx* 5-fidus, æstivatione valvatâ. *Corolla* nulla. *Genitalia* stipitem terminantia. *Antheræ* 15, congestæ v. polyadelphæ, biloculares; loculis parallelis. *Ovaria* 5, pluriovulata. *Styli* cohærentes. *Stigma* divisum v. lobatum. *Folliculi* ligneo-coriacei, polyspermi. *Embryo* rectus, longitudine albuminis bipartibilis. *Cotyledones* albumini cohærentes. *Radicula* hilo contraria.

CHARACTERES UNIVERSALES. *Flores* unisexuales. *Calyx* coloratus, æqualis, æstivatione valvata rarò ejusdem modificatione induplicata. *Corolla* 0. *Stamina* hypogyna. *Antheræ* biloculares. *Pericarpia* distincta.

STERCULIA.

Sterculiæ pars *auctorum ferè omnium.*

CHAR. GEN. *Calyx* 5-fidus (raro 4-fidus). *Antheræ* v. inordinatim congestæ v. polyadelphæ. *Ovaria* pluriovulata. *Styli* cohærentes (in unicum sæpiùs arctè deflexum). *Stigmata* in unicum 5-lobum coalita quandoque distincta. *Folliculi* lignei v. coriacei. *Semina* albuminosa; albumine bipartibili cum cotyledonibus plùs minùs arctè cohærenti. *Embryonis radicula* hilo contraria.—Arbores *intra tropicos Asiæ* (*et insularum adjacentium*) *Africæ et Americæ provenientes.* Folia *indivisa, v. lobata, v. in paucis digitatim* 227] *composita.* Inflorescentia *v. paniculata v. racemosa, in plerisque nutans;* floribus *terminalibus sæpiùs præcocioribus et femineis, et in his stylus arctè deflexus.*

* *Folia composita, digitata: foliolis cum petiolo articulatis et separatim solubilibus.*

α. *Calycis laciniæ patulæ.*

STERCULIA (*fœtida*) foliolis 7—5 elliptico-lanceolatis acuminatis petiolatis vix quadruplo longioribus quam latis utrinque glabris.

S. fœtida, *Linn., DeCand.*

Loc. Nat. India orientalis, Insulæque Moluccanæ.

Obs. Varietatem in orâ septentrionali Novæ Hollandiæ, anno 1802, legi cujus venæ primariæ subflexuosæ et magis deliquescentes.

S. (*polyphylla*) foliolis 9—11 lineari-lanceolatis elongatis sessilibus sexies longioribus quam latis utrinque glabris.

Loc. Nat. E Sumatra, ad fretum Sunda, folium unicum reportavit D. G. Staunton (v. s.).

Obs. Figura Clompani majoris, *Rumph. Amb.* iii, t. 107, sat benè respondet, arboremque juvenilem biorgyalem, foliis omnibus sumatrano similibus, in Hort. Reg. Paris. cultam anno 1843 vidi.

S. (*mexicana*) foliolis 7 cuneato-oblongis basi attenuatis petiolatis glaberrimis, floribus (masculis) paniculatis, calycibus intus barbatis.
Loc. Nat. Mexico ad Chiapas D. Linden v. s. in Herbb. Hort. Paris. et D. Delessert.
Obs. Feminei flores et pericarpia desiderantur ideoque genus incertum.

* β. *Calycis laciniæ conniventes, apicibus diù cohærentibus.*

S. (*versicolor*) foliolis oblongo-ellipticis acuminatis subtùs tomentosis.
S. versicolor, *Wall., Pl. asiat. rar.* i, p. 48, tab. 59.
Loc. Nat. Ind. or. ad ripas Irrawaddi D. Wallich.
Obs. Fructus ignotus.

** *Folia simplicia, aliqua v. omnia lobata. Calycis laciniæ patentes.*

S. (*urens*) foliis 3—5-lobis subtùs tomentosis velutinis, paniculis compositis erectis, calycis laciniis basi lingulâ deflexâ, floribus decandris, urceolo antherarum cylindraceo, stylo erecto.
S. urens, *Roxb. Corom. pl.* i, p. 25, t. 24.
Loc. Nat. India orientalis, Roxburgh.

S. (*villosa*) foliis 5—7-lobis acuminatis subtùs tomentosis velutinis, paniculis compositis pendulis, calycis æstivatione induplicata ! stylo deflexo.
S. villosa, *Roxb. Fl. ind.* iii, p. 153.
Loc. Nat. Ind. or., Roxburgh.

S. (*abyssinica*) foliis 3—5-lobis adultis supèr glabris subtèr pubescentibus, racemis (femineis) sub-simplicibus nutantibus, calycibus glabriusculis: laciniis intùs extra medium villosis, columna genitalium glaberrimo calyce breviore, stylo recurvo, folliculis polyspermis intus setosis.

S. abyssinica, *R. B. in Salt, Trav. app.*, p. lxiv.

Loc. Nat. Abyssinia, D. Salt.

228] S. (*tomentosa*) foliis cordatis plerisque trilobis adultis utrinque tomentosis velutinis, floribus racemosis pendulis, calycibus extùs tomentosis, stipiti genitalium piloso.

S. tomentosa, *Guillem. Perrottet et Richard, Flor. senegamb.*, i, p. 81, tab. 16.

Loc. Nat. Africa æquinoctialis.

Obs. S. abyssinicæ nimis affinis.

S. (*Triphaca*) foliis reniformibus acutis indivisis obsoletè trilobisve adultis supèr glaberrimis subtèr glabriusculis, ovariis 2—3, stylo recurvo, stigmate lobato-capitato.

Triphaca africana, *Lour. Cochin.*, 577 (et *DeCand. Prodr.*) fid. fragm. ab ipso Loureiro in Herb. Mus. Paris.

Loc. Nat. Africa orientali-australis contra Mozambique, Loureiro.

S. (*carthaginensis*) foliis 3—5-lobis obtusis acutiusculisve cordatis adultis supèr glabratis subnitentibus subtèr velutino-tomentosis cinereis venulis immersis, calycibus extùs furfuraceo-tomentosis intùs glabris, stylo recurvo.

S. carthaginensis, *Cav. Diss.* vi, p. 353.

S. Helicteres, *Pers. Syn.* ii, p. 240. *DeCand. Prodr.* i, p. 483.

S. Chicka, *Aug. St. Hil. Pl. usuell. des Brasil.*, tab. 46, *et Fl. Brasil. merid.*, i, p. 278, fid. exempl. ab ipso Auct. in Herb. Mus. Paris.

Helicteres apetala, *Jacq. Amer.*, p. 238, ubi desc. opt. cum ic. flor. in tab. 181, fig. 97, fide floris unici feminei in Herbario ipsius Jacquin in Museo Britannico asservato.

Obs. Ab hâc vix differt *Chichæa acerifolia*, Presl, Reliq. Hænck. ii, p. 141, quamvis ad plantam suam stylum erectum attribuit; et hujus loci forsan *St. punctata,* DeCand. Prodr. i, p. 483, vix obstante foliorum lobis acuminatis figuræ ineditæ.

S. (*striata*) foliis 3—5-lobis acutiusculis obtusisve cordatis adultis supèr glabris non nitentibus subtèr pubescentibus rugosis venulis emersis, calycibus extùs pilosis.

S. striata, *Aug. St. Hilaire et Naudin, in Annal. des sc. nat., ser.* 2, *tom.* xviii, *bot. p.* 213.

Loc. Nat. Brasilia, v. Martius (in cujus herb. S. chicka) et D. Gardner.

*** *Folia simplicia, omnia indivisa.*

a. Calyx 5-*partitus, patens; laciniis medio intùs lingulâ (squamulâ abbreviatâ) auctis. Antheræ decem, sed subcongestæ (nec æquidistantes).*

S. (*Ivira*) foliis ovato-oblongis acutis basi obtusâ (nec cordatâ) adultis supèr glabris subtèr petiolisque tomentosis.

Ivira pruriens, *Aubl. Guian.*, p. 695, t. 279. Character ab ipso exemplari Aubletii in Herb. Banks. Mus. Brit.

S. Ivira, *Sw. Prodr.* p. 98, *Flor. Ind.-occident.* ii, p. 1160.

Obs. Character specific. et descr. Swartzii præsertim e descriptione Aubletii deprompta est, sed partim a sequenti.

S. (*caribæa*) foliis ovato-oblongis acutis basi obtusâ adultis supèr petiolisque glaberrimis subtèr glabriusculis.

Loc. Nat. In Insulis Caribæis legit De Ponthieu.

S. (*propinqua*) foliis oblongo-ovatis acutis basi cordatâ [239 subtèr tomentosis.

Loc. Nat. A Surinam misit D. Hostmann.

Obs. A *S. Ivira* foliis basi cordatâ præsertim et vix aliter differt.

S. (*frondosa*) foliis ad apicem ramuli confertis oblongis obtusissimis basi obtusiusculâ lævibus adultis supèr glaberrimis nitidis subtèr glabris venulis altè immersis, racemis axillaribus pedunculatis divisis.

Sterculia frondosa, *Richard in Act. soc. hist. nat. paris.*, p. 111.
Loc. Nat. Guiana Gallica, *D. Richard.*

S. (*Surinamensis*) foliis ad apicem rami confertis oblongis obtusissimis basi obtusiusculâ adultis utrinque pubescentibus venulis subtèr parùm emersis, racemis axillaribus pedunculatis divisis.
Loc. Nat. A Surinam misit *D. Hostmann, v. s.* in Herb. D. Hooker.

S. (*rugosa*) foliis oblongis obtusissimis venis venulisque subtèr prominentibus rugosis.
Loc. Nat. In Demerarâ detexit *A. Anderson,* Horti Botanici Ins. Sti. Vincentii tunc præfectus.

*** β. Calyx patens, laciniis absque lingulâ.*

S. (*guttata*) foliis oblongo-ovatis acutis acuminatisve basi obtusâ subcordatâ adultis subtèr tomentosis, racemis axillaribus indivisis, floribus subternis subsessilibus, calycibus extùs furfuraceo-tomentosis intùs villosis.
Sterculia guttata, *Roxb. Fl. ind.* iii, p. 148.
α. folia oblongo-ovata acuta.
β. folia obovata acuminata, racemis folio multotiès brevioribus.
Loc. Nat. Ind. Or., *D. Roxburgh.*

S. (*Madagascariensis*) foliis oblongis altè cordatis obtusis adultis utrinque glaberrimis, racemis compositis, pedunculis calycibusque extùs pube stellari cinereis.
Loc. Nat. Madagascar, *D. Richard de Bourbon in Herb. Mus. Paris.*

S. (*Roxburghii*) foliis ovalibus oblongisve acuminatis basi obtusâ utrinque glabris, racemis axillaribus folio brevioribus, calycibus profundè 5-fidis: laciniis lanceatis imberbibus.
Sterculia Roxburghii, *Wall. List,* n. 1124.
Sterculia lanceæfolia, *Roxb. Fl. ind.* iii, p. 150.
Loc. Nat. Ind. Or., Sillet, *Dr. Wallich.*

S. (*lanceolata*) foliis elliptico-lanceolatis acutis basi acutiusculâ adultis utrinque glabris, paniculis axillaribus folio brevioribus, calycibus quinquepartitis patulis imberbibus glabriusculis.

Sterculia lanceolata, *Cav. Diss.* v, p. 287, t. 143, f. 1. *Lindl. in Bot. regist.*, 1256.

Loc. Nat. China.

S. (*parvifolia*) foliis lanceolatis utrinque glaberrimis acutis subacuminatisve basi acutâ, racemis axillaribus simplicibus folio brevioribus.

Sterculia parvifolia, *Wall. List*, n. 1123. [230

Loc. Nat. Ins. Penang, *Dr. Wallich.*

S. (*Javanica*) foliis obovatis acumine brevissimo basi obtusâ subcordatâ subtèr tomentosis, paniculis cernuis, calycibus patulis utrinque tomentosis.

Sterculia cordata, *Blume Bijdr.*, p. 86?

Loc. Nat. Java, *Dr. Horsfield.*

S. (*macrophylla*) foliis altè cordatis obtusis indivisis subtèr tomentosis, paniculis lateralibus cernuis, calycibus 5-fidis patentibus.

Sterculia macrophylla, *Vent. Malm.* ii, n. 91 *in adnot. De Cand. Prodr.* i, p. 483.

Loc. Nat. Java, *Dr. Horsfield.*

S. (*comosa*) foliis ovatis cordatis acuminatis subtèr tomentosis, paniculis decompositis, calycibus patentibus.

Sterculia comosa, *Wall. Pl. asiat. rar.* ii, p. 25, t. 127.

Loc. Nat. Amboina, *in Hort. Calc. cult.*, *Wallich.*

S. (*longifolia*) foliis oblongis acutiusculis glabris, racemis subsimplicibus, pedicellis subgeminis folio brevioribus, calycis laciniis patentibus intùs barbatis tubum extùs glabriusculum subæquantibus.

Sterculia longifolia, *Vent. Malm.* ii, n. 91 *in adnot.* fid. specim. in Herb. Vent.

Obs. Cfr. Sterculiam lanceolatam, *Blume, Bijdr.* quoad folia et inflorescentiam similem sed calycis laciniis conniventibus et apice connexis diversam.

Loc. Nat. Java, *Dr. Horsfield.*

S. (*lævis*) foliis oblongo-lanceolatis acumine lineari obtuso basi acutiusculis utrinque glabris, racemis subsimplicibus folio brevioribus, calyce extùs glabro: laciniis patentibus tubo duplò longioribus e latâ basi linearibus intùs barbatis.

Sterculia lævis, *Wall. List,* n. 1138.

Sterculia coccinea, *Jack in Mal. miscel.* i, *non Roxburgh.*

Loc. Nat. Pulo Pinang.

S. (*Spangleri*) foliis lanceolato-oblongis acutis subacuminatisve utrinque glabris, racemis subcompositis, calycibus extùs glabris: laciniis patentibus e latiore basi subulatis intùs barbatis tubo duplò longioribus.

Obs. Proxima *Sterculiæ lævi* et *longifoliæ;* ab illâ foliorum latiorum et basi obtusiorum acumine breviore et ab apice folii sensim angustato nec subitò constricto et lineari; ab hâc præsertim calycis laciniis tubo duplò longioribus diversa.

Loc. Nat. Java, *D. Spangler in Herb. D. Hooker.*

S. (*coccinea*) foliis lanceolatis subacuminatis basi obtusiusculâ adultis utrinque glabris, paniculis axillaribus cernuis, calyce extùs glabro: laciniis e latâ basi filiformibus barbatis tubo abbreviato 4—5-plò longioribus.

231] β. folia cuneato-lanceolata, racemi subsimplices folio breviores.

Sterculia coccinea, *Roxb. Fl. ind.* iii, p. 151. *Wall. List,* n. 1122.

Loc. Nat. α. Sillet, *Roxb.*, *Wall.* β. Assam, *D. Griffith.*

Obs. Ad hanc sectionem forsan referendæ Helicteres undulata et paniculata, *Lour. Cochin.*, p. 531: et ad eandem primo intuitu pertinere videtur Sterculia punduana, *Wall. List,* n. 2701, quæ autem Reevesiæ species est, R. Wallichii, *nob.*

*** γ. *Calycis laciniæ conniventes apicibus diù cohærentibus.*

S. (*nobilis*) foliis ovali-oblongis brevè acuminatis basi obtusâ utrinque glabris, paniculis pendulis calycibusque extùs pube rarâ conspersis, stigmatibus subrotundis stylo deflexo multoties brevioribus.

Sterculia monosperma, *Vent. Malm.* ii, n. 91.

Sterculia Balanghas, *Roxb. Fl. ind.* iii, p. 144, *non Linnæi.*

Southwellia nobilis, *Salisb. Parad. lond.*, t. 69, exclus. synn. Linnæi, Cavanilles et Hort. Malab.

Loc. Nat. China; in Hort. Bot. Calc. et Europæis culta.

S. (*Balanghas*) foliis oblongo-ovalibus obtusiusculis v. acumine brevissimo obtuso basi obtusâ (nec cordatâ) adultis supèr glabris subtèr pubescentibus, paniculis calycibusque extùs tomentosis: laciniis intùs densè barbatis, folliculis polyspermis extùs tomentosis intùs glabris.

Sterculia, *Linn. Flor. zeyl.*, n. 350, *fide speciminum Herb. Hermanni*, vol. ii, fol. 42.

Sterculia Balanghas, *Linn. Sp. pl.* ed. 1, p. 1007.

Cavalam, *Hort. malab.* i, p. 89, t. 49.

Loc. Nat. Zeylona et Peninsula Indiæ Orientalis.

Obs. Hujus varietas ut videtur foliis acutis acutiusculisve nec unquam constrictè acuminatis, petiolis adultis pubescentibus, ex Herb. D. Wight, et probabiliter illius *S. Balanghas*, Illustr., tab. 30.

S. (*angustifolia*) foliis oblongo-lanceolatis attenuato-acuminatis basi obtusâ adultis supèr glabriusculis subtèr copiosè pubescentibus, paniculis nutantibus folia superantibus, calycibus extùs tomentosis: laciniis intùs modicè barbatis tubo longioribus, stigmatibus distinctis recurvis stylum æquantibus.

Sterculia angustifolia, *Roxb. Fl. ind.* iii, p. 148. *Wall. List*, n. 1133.

Loc. Nat. Nepalia.

S. (*mollis*) foliis elliptico-oblongis acutis acuminatisve basi obtusâ adultis supèr pube rarâ scabriusculis subtèr velutino-tomentosis, paniculis laxis nutantibus ramulis pedicellisque capillaribus pilis patulis, calycibus extùs tomentosis: laciniis intùs barbatis longitudine tubi hemisphærici, stigmatibus distinctis stylum æquantibus, folliculis polyspermis extùs velutinis intùs pilosiusculis.

Sterculia mollis, *Wall. List*, n. 1131, *fid. sp. Herb. Wallichiani in Museo Soc. Linn. Lond.*

Loc. Nat. Martabania, *Dr. Wallich.*

S. (*rubiginosa*) foliis cuneato-oblongis acutis v. constrictè acuminatis basi obtusâ adultis supèr glabris subtèr pubescentibus venoso-rugosis, stipulis longitudine petiolorum, 232] paniculis folia vix æquantibus, calycibus extùs tomentosis: laciniis intùs densè barbatis tubum turbinatum superantibus.

Sterculia rubiginosa, *Vent. Malm.* ii, fol. 91 *in adnot. fide specim. in Herb. D. de Jussieu et D. Smith a Thouin.*

Sterculia angustifolia, *Jack in Mal. miscell.*, vol. i.

Sterculia Jackiana, *Wall. List*, n. 1134, *sec. specimina in Herb. Wallich. Musei Soc. Linn.* e quibus character specif. desumptus.

Loc. Nat. Java, *Ventenat.* Pulo Pinang et Singapore, *Jack et Wallich.*

S. (*cuneata*) foliis cuneato-obovatis ellipticisve acutiusculis basi obtusâ adultis supèr glabris subtèr pubescentibus, petiolis stipulas subulatas vix æquantibus, racemis terminalibus subsimplicibus, calycis laciniis intùs strigoso-barbatis tubo cyathiformi longioribus.

Loc. Nat. Insulæ Philippinæ, *D. H. Cuming.*

S. (*ferruginea*) foliis oblongo-lanceolatis attenuato-acuminatis basi obtusiusculâ adultis supèr glabris subtèr pubescentibus venoso-rugosis, ramulis petiolis calycibusque extùs ferrugineo-tomentosis, racemis subcompositis, calycis laciniis tubo duplò longioribus, stigmatibus recurvis stylo arctè deflexo dimidio brevioribus.

Loc. Nat. Ins. Philippinæ, *D. H. Cuming.*

S. (*stipularis*) foliis cuneato-oblongis acuminatis membranaceis basi cordatâ adultis supèr glabriusculis subtèr petiolisque undique tomentosis, stipulis petiolos æquantibus, racemis compositis elongatis pendulis furfuraceo-pubescentibus, calycis laciniis intùs strigoso-barbatis tubo turbinato paullò longioribus.
Loc. Nat. Insulæ Philippinæ, *D. H. Cuming.*

S. (*oblongata*) foliis oblongis acutiusculis basi obtusissimâ adultis supèr glaberrimis subtèr glabriusculis, paniculâ foliis (spithameis—pedalibus) breviore, calycis laciniis tubum urceolatum glabriusculum vix æquantibus subulatis pubescentibus demùm solutis.
Loc. Nat. Insulæ Philippinæ, *D. H. Cuming.*

S. (*grandifolia*) foliis cuneato-oblongis basi (apiceque?) obtusis adultis glabris, racemis simplicibus petiolo elongato brevioribus, calycis laciniis linearibus utrinque tomentosis: tubo brevissimo.
Loc. Nat. Java, *Spangler in Herb. D. Hooker.*

S. (*cuspidata*) foliis oblongo-ovatis acumine lineari basi obtusis utrinque glaberrimis, racemis simplicibus, calycibus extùs glabris: laciniis subulatis intùs pilosiusculis tubum turbinatum æquantibus.
Loc. Nat. Sumatra, *D. Raffles.*

S. (*insularis*) foliis ovali-oblongis acutis basi obtusâ utrinque glabris, floribus paniculatis, calycis tubo turbinato glabro lacinias intùs barbatas demùm distinctas et patentes æquante.
Loc. Nat. Insula Moluccana Honimoa, *Ch. Smith.*

S. (*parviflora*) foliis oblongo-ovatis acuminatis basi transversâ subcordatâ adultis subtèr tenuissimè pubescentibus, floribus 5-fidis paniculatis tomento adpresso, [233 calycis tubo urceolato laciniis adpressè tomentosis longiore.

Sterculia parviflora, *Roxb. Fl. ind.* iii, p. 147. *Wall. List,* n. 1121.
Loc. Nat. Sillet, *Roxb. et Wallich.*

S. (*quadrifida*) foliis ovatis cordatis acutis obtusiusculisve adultis utrinque glabris, floribus subpaniculatis plerisque 4-fidis, calycibus extùs laciniisque tubum urceolatum æquantibus intùs tomentosis.

α. folia obtusiuscula, tomentum paniculæ et calycis haud adpressum.

β. folia acuta, tomentum paniculæ et calycis extùs subadpressum.

Loc. Nat. Nova Hollandia; *α.* in orâ orientali, *β.* in orâ septentrionali, ann. 1803 legi.

S. (*urceolata*) foliis ovatis ellipticisve acutis basi obtusâ adultis glabriusculis, floribus paniculatis, calyce tomentoso: laciniis tubum ovatum subæquantibus intùs barbatis pilis strictis.

Sterculia urceolata, *Smith in Rees's Cyclop.:* fid. exempl. in Herb. Smith. in Mus. Soc. Linnean. An hujus loci *S. Candollei,* Wall. Pl. asiat. rar. i, p. 4, quæ *Sterculia populifolia α,* DeCand. Prodr. i, p. 483?

Loc. Nat. Honimoa, Ins. Moluc., *Ch. Smith.*

S. (*ceramica*) foliis ovatis subcordatis acutiusculis adultis utrinque paniculisque glabris, calycibus glaberrimis alabastro obtuso.

Loc. Nat. Insula Moluccana Ceram, *Ch. Smith.*

Obs. An laciniæ calycis apice connexæ?

S. (*Tragacanthæ*) foliis ovatis acutis basi obtusâ adultis supèr pube rarâ conspersis subtèr tomentosis, calycis laciniis tubum turbinatum æquantibus.

Sterculia Tragacanthæ, *Lindl. in Bot. regist.,* 1353.

Loc. Nat. Africa Æquinoctialis prope Sierra Leone.

S. (*obovata*) foliis obovatis acumine brevissimo basi obtusâ adultis supèr glabriusculis subtèr pubescentibus, folliculis tomentosis.

Loc. Nat. Africa Æquinoctialis ad flumen Congo, *Christian Smith.*

TETRADIA.

CHAR. GEN. *Calyx* 4-part. (nunc 3-part.). *Antheræ* 8, simplici serie, loculis omnibus parallelis. *Ovaria* 4, ovulis numerosis. *Stigmata* recurva. *Arbor* (*Javanica*) *foliis indivisis, racemis axillaribus brevibus monoicis, floribus hermaphrodito-femineis columna nulla, aliquoties majoribus masculo cui columna manifesta gracilis et rudimenta minuta pistilli.*

Obs. Pericarpia et Semina ignota statio generis? incerta: propè Brachychiton posui ob ovula basi parum obliqua foramen hilo proximum indicante.

Tetradium, *Lour. cochin.*, p. 91, fide exemplaris ab auctore ad D. Banks missi Fagaræ species est.

TETRADIA *Horsfieldii.*

Loc. Nat. Java, *Dr. Horsfield.*

BRACHYCHITON. [234

Sterculiæ subgenera sequentia. Brachychiton, Poecilodermis et Trichosiphon, *Endl. Gen.*, p. 994.

CHAR. GEN. *Calyx* 5-fidus. *Antheræ* congestæ. *Styli* cohærentes. *Stigmata* distincta, v. in unicum peltatum coalita. *Folliculi* coriaceo-lignei, polyspermi. *Semina* albuminosa, pube stellari tecta, mutuò et fundo folliculi cohærentia. *Embryonis radicula* hilo proxima!—Arbores (Novæ Hollandiæ) *foliis lobatis indivisisve.*

* *Calycis æstivatio induplicata* (*tubus squamis numerosis inflexis*). Sterculiæ subgenus BRACHYCHITON, *Endl.*

BRACHYCHITON (*ramiflorum*) foliis cordatis circumscriptione subrotundis trilobis obtusis utrinque folliculisque extùs tomentosis.

Loc. Nat. In orâ septentrionali Novæ Hollandiæ ann. 1802—3 legi.

** *Calycis æstivatio valvata.*

Br. (*incanum*) foliis altè 5-lobis tomentosis subtèr incanis: lobis acuminatis, folliculis extùs tomentosis.

Obs. Æstivatio ignota, an induplicata?

Loc. Nat. In orâ septentrionali Novæ Hollandiæ ann. 1819 legit b. A. Cunningham.

Br. (*platanoides*) foliis altè 5-lobis acutis glabris, racemis subsimplicibus, calyce infundibuliformi, stigmate peltato, folliculis extùs glabris.

Trichosiphon, *Endl. Gen.*, p. 994.

Loc. Nat. In orâ orientali, intra tropicum, Novæ Hollandiæ ann. 1802 legi.

Br. (*populneum*) foliis ovatis acuminatis indivisis trilobisve basi acutâ v. obtusâ glaberrimis, racemis axillaribus subsimplicibus, calycibus campanulatis, folliculis elongato-stipitatis.

Poecilodermis, *Endl. Gen.*, p. 994.

Loc. Nat. In orâ orientali, extra tropicum, Novæ Hollandiæ ann. 1803—4 legi.

Br. (*diversifolium*) foliis ovatis elongato-acuminatis basi obtusâ v. cordatâ glaberrimis (quandoque oblongis linearibusve), folliculis extùs glabriusculis abbreviato-stipitatis.

Loc. Nat. In orâ septentrionali Novæ Hollandiæ ann. 1803 legi.

PTERYGOTA, *Endl. Gen.*, p. 995.

CHAR. GEN. *Calyx* 5-partitus. *Antheræ* congestæ v. polyadelphæ. *Stigmata* distincta. *Folliculi* lignei, polyspermi. *Semina* apice alata! albuminosa. *Radicula* *embryonis* hilo proxima.—Arbor (Indiæ Orientalis) *foliis indivisis.*

PTERYGOTA *alata.*
Sterculia alata, *Roxb. Coromand.* iii, p. 84, t. 287.
Loc. Nat. Ind. Or., Silhet et Chittagong, *D. Roxburgh.*

HILDEGARDIA. [235

Sterculiæ subgenus HILDEGARDIA, *Endl. Gen.*, p. 994.

CHAR. GEN. *Calyx* 5-partitus. *Antheræ* congestæ. *Folliculi* membranacei, venosi, apice alati, tardiùs dehiscentes. *Semina* albuminosa. *Radicula embryonis* hilo proxima.—Arbor (Indiæ Orientalis) *foliis cordatis indivisis.*

HILDEGARDIA *populifolia.*
Sterculia populifolia, *Roxb. Fl. ind.* iii, p. 148. *Wall. Pl. asiat. rar.* i, p. 3, t. 3.
Loc. Nat. Ind. Or., *Roxburgh et Wallich.*

FIRMIANA, *Marsili in Act. Patav.* i, p. 116, t. 1 et 2.

Sterculiæ subgenera FIRMIANA et ERYTHROPSIS, *Endl. Gen.*, p. 994.

CHAR. GEN. *Calyx* v. 5-partitus tubo brevissimo, v. tubulosus semiquinquefidus. *Antheræ* (15) congestæ v. polyadelphæ. *Styli* coaliti, *stigmate* lobato. *Pericarpia* longè ante maturitatem aperientia, membranacea, foliiformia. *Semina* 2—4, albuminosa. *Embryo* transversus; *Radicula* infera.—Arbores Asiatici (Chinensis et Indiæ Orientalis) *foliis lobatis.*

* *Calyx 5-partitus; tubo brevissimo fasciculis quinque pilorum intùs barbato.* Sterculiæ subgenus FIRMIANA. *Endl. Gen.*

FIRMIANA *platanifolia.*
Sterculia platanifolia, *Linn. fil. Suppl. Plant.* p. 422.

Sterculia pyriformis, *Bunge in Act. Petrop., sav. etrang.* ii, p. 83, fid. exempl. e Mus. Acad. Petrop. in Herb. D. Hooker.

Sterculia tomentosa, *Thunb. Ic. pl. Japon. dec.* 4.

Loc. Nat. China et Japonia.

** *Calyx tubulosus quinquedentatus v. semiquinquefidus; tubo intùs fasciculis* 5 *pilorum.* ERYTHROPSIS, *Lindl.* Sterculiæ subgenus ERYTHROPSIS, *Endl. Gen.*

F. *colorata.*

Sterculia colorata, *Roxb. Coromand.* i, p. 26, t. 25.

a. calyx extùs furfuraceo-pubescens, pube stellari radiis abbreviatis rigidis: tubo dentibus ferè quater longiore foliis adultis subtùs glabriusculis.

β. calyx extùs furfuraceo-pubescens, pube stellari radiis abbreviatis rigidis: tubo dentibus quater et ultra longiore, foliis adultis subtùs pube copiosa scabris.

St. fulgens, *Wall. List,* n. 1135.

Forsan distincta species.

γ. calyx extùs pube stellari radiis laxis patentibus velutino: tubo dentibus vix ter longiore.

An species distincta?

Loc. Nat. Ind. Or. et Ins. adj., *Roxburgh et Wallich.*

236]

SCAPHIUM.

Sterculiæ subgenus SCAPHIUM, *Endl. Gen.*

CHAR. GEN. *Flores* monoici. *Calyx* 5-fidus. *Antheræ* (15) congestæ. *Ovaria* disperma. *Styli* coaliti. *Stigma* 5-lobum. *Pericarpia* longè ante maturitatem aperientia, foliacea, navicularia. *Semen* unicum, albuminosum? *Embryonis radicula* hilo proxima.—Arbor (Indiæ Orientalis) *foliis indivisis.*

SCAPHIUM *Wallichii.*

Sterculia scaphigera, *Wall. List,* n. 1130.

Loc. Nat. Martabania, *Wallich.*

PTEROCYMBIUM (*v. suprà*).

COURTENIA.

CHAR. GEN. *Calyx* 5- (raro 4-) fidus, patens. *Antheræ* (10) simplici serie æquidistantes; loculis omnibus parallelis. *Ovaria* 10! (nunc 11—12, rarò 5?). *Stigmata* 10 recurva (stylo brevissimo). *Folliculi* crassi, polyspermi. *Semina* exalbuminosa. *Radicula* hilo proxima.—Arbores (Africæ Æquinoctialis); foliis *altè lobatis;* floribus *sæpius congestis.*

COURTENIA *Afzelii*, caudice simplicissimo, foliis palmato 5—3-lobis cordatis: lobi medii dimidio inferiore angustiore, floribus caulinis congestis.

Loc. Nat. Africa Æquinoctialis prope Sierra Leone et Congo. In Hort. Reg. Kew. florentem vidi ann. 1808 et 1843.

C. *triloba*, foliis circumscriptione cuneatis basi obtusa palmato-trilobis: lobi medii dimidio inferiore haud augustiore, floribus axillaribus congestis.

Loc. Nat. Africa Æquinoc., Senegambia, *Heudelot in Mus. Paris. et Herb. D. Delessert.*

C.? *heterophylla*, foliis palmato-trilobis indivisisve basi cuneata, racemis laxis, ovariis quinque.

Sterculia heterophylla, *Palis. Fl. d'Oware*, p. 67, t. 40.

Loc. Nat. Africa Æquinoct., Oware.

Obs. Fructus ignotus ideoque et ob ovaria tantum quinque dubii generis planta, sed habitus ferè Courteniæ trilobæ quacum etiam convenit antherarum dispositione et numero, defectu columnæ et stigmatum forma.

COLA.

Sterculiæ subgenus COLA, *Endl. Gen.*

CHAR. GEN. *Calyx* 5-fidus, patens. *Antheræ* (10) simplici serie; loculis divaricatissimis! *Ovaria* multiovulata. *Stigmata* sessilia, distincta, filiformia. *Folliculi* dehiscentes, polyspermi (quandoque monospermi). *Semina* exalbuminosa. *Radicula embryonis* hilo proxima.—Arbores *foliis indivisis glabris.*

237] *Obs.* Ad hoc genus vix pertinet planta e Sierra Leone, ab Afzelio lecto, habitu quidem simili, stipiti genitalium nullo, stigmatibus distinctis sessilibus, floribus axillaribus, foliis cuneato-ellipticis basi attenuatis utrinque glaberrimis glabris, sed diversa antherarum loculis parallelis.

COLA *acuminata*, foliis elliptico-oblongis acuminatis basi acutiuscula adultis utrinque glabris, calycibus altè 5-fidis, genitalibus sessilibus.

Sterculia acuminata, *Palis. Flor. d' Oware*, i, p. 41, t. 24.
——— grandiflora, *Vent. Malm.* ii, p. 91 *in adnot.*, ramulus cum racemo hermaphrodito-femineo.
——— nitida, *Vent. Malm.*, l. c., ramulus floribus masculis.
——— macrocarpa, *Don, Dict.* i, p. 515.
——— verticillata, *Schumach. Plant. guin.*, p. 240.
——— oblongifolia, *DeCand. Prodr.* i, p. 482?
Lunania Bichy, *DeCand. Prodr.* ii, p. 92.

Loc. Nat. In Africâ Æquinoctiali ad Sierra Leone, Congo; a nigritis olim in Antillis introducta; culta etiam in Brasiliâ, Mexico?, et Insulâ Mauritii.

C. *cordifolia,* foliis orbiculato-ovatis cordatis indivisis passimque semitrilobis adultis subtèr pubescentibus, calycibus urceolatis semi-5-fidis, genitalibus brevissimè stipitatis.

Sterculia cordifolia, *Cav. diss.* v, p. 286, t. 143, f. 2 (exclus. fruct. ad St. tomentosam sec. auctores flor. senegamb. pertinenti), *Guillem. Perrottet et Richard, Flor. senegamb.*, p. 79, t. 15.

Loc. Nat. Africa Æquinoct., Senegambia.

Obs. Ad Colam retuli præsertim ob antherarum loculos divaricatissimos, semina exalbuminosa et radiculam embryonis hilo proximam, attamen differt a C. acuminata floribus (multotiès minoribus) suburceolatis 5-dentatis et, secundum D. Perrottet, seminibus arillatis, necnon habitu.

HERITIERA, *Dryand. in Hort. Kew.* ed. 1, iii, p. 546.

CHAR. GEN. *Calyx* 5-fidus. *Antheræ* 5. *Ovaria* uniovulata! *Pericarpia* folliculiformia, lignea, clausa, dorso alata. *Semen* exalbuminosum. *Radicula* hilo proxima.—Arbores (Asiaticæ) *littoreæ;* foliis *indivisis subtùs lepidotis squamulis incisis ;* floribus *axillaribus subpaniculatis.*

HERITIERA *littoralis,* foliis elliptico-oblongis ovatisve obtusiusculis.

Heritiera littoralis, *Dryander in Ait. Kew.* ed. 1, vol. iii, p. 546.

H. fomes, *Buchanan in Sym. Ava. Willd. sp.* iv, p. 972. *DeCand. prodr.* i, p. 484.

H. minor, *Lam. dict.* iii, p. 229. *DeCand. prodr.* i, p. 484.

Loc. Nat. Littora Ind. Or. Insul. Molucc. Philipp. Javæ et Nov. Holl.

H. *attenuata,* foliis lanceolatis acuminatis.

Heritiera attenuata, *Wall. List,* n. 1140.

Loc. Nat. Ora Martabaniæ et Tenasserim, *Wallich.*

Genus dubiæ tribus.

Micrandra.

Char. Gen. *Masc.*—*Calyx* turbinatus, 5-fidus, patens, 238] æqualis, æstivatione valvatâ. *Cor.* 0. *Antheræ* 5 (6?) biloculares, loc. parallelis, duplici verticillo, adnatæ medio columnæ filiformis ultra productæ, indivisæ. *Fem.* ignota.

Arbor? floribus *paniculatis;* foliis *ternatis foliolis petiolatis, petiolis partialibus cum communi haud articulatis, nec apice teretibus v. incrassatis,* ideoque vix ad Sterculiaceas pertinens.

Micrandra *ternata.*

Loc. Nat. Brasilia? forsan Para? v. s. in Mus. Paris. ex Herb. Ulyssip.

Obs. Foliola elliptico-oblonga acuta, adulta super glaberrima nitida subtùs pube tenui simplici conspersa venis primariis parùm eminentibus costata.

ACTINOPHORA FRAGRANS, *Wallich.* [239

TAB. XLVI.

ACTINOPHORA, *Wallich.*

CHAR. GEN. *Calyx* 5-partitus; fructûs auctus, patens, foliaceus. *Petala* angusta, diù persistentia. *Stamina* indefinita, distincta. *Ovarium* 4-loculare; loculis biovulatis. *Stigmata* 4 (rarò 3 v. 5), indivisa. *Pericarpium* evalve, ruptile, monospermum. *Semen* erectum.

Arbor *parva* v. Frutex *subarborescens, multicaulis.* Folia *alterna, stipulata.* Inflorescentia *axillaris.*

ACTINOPHORA *fragrans,* Wallich, List, n. 1163.

DESCR.—*Arbor* v. *Frutex* multicaulis, 10—12-pedalis; caules partiales inordinatè ramosi, ramis ramulisque patulis parumque flexuosis, ultimis pube brevissimâ tomentosis. *Folia* simplicia, alterna, petiolata, stipulata, cuneato-oblonga, acutiuscula, 3—3½ uncias longa, 1½ unciam lata, coriacea, trinervia, nervis venisque primariis subtus elevatis, extra medium dentato-repanda, adulta super glabra subter pube stellari et tomento simplici flexuoso tecta: *petioli* breves. *Stipulæ* laterales, subulatæ, petiolo breviores. *Racemi* corymbosi, pauciflori, axillares, folio breviores. *Flores,* paulò ante expansionem visi, parvi. *Calyx* 5-partitus, æqualis, æstivatione valvatâ; laciniis coriaceis, ovatis, acutiusculis, planis, pube stellatâ utrinque tectis extùs copiosiore, post anthesin plurimùm auctis, trinerviis, reticulato-venosis, planis, subscarioso-membranaceis, pube rariore conspersis. *Petala* 5 foliolis calycis alternantia, mox ante expansionem calycis parva, lanceolata, basi parùm attenuata, post anthesin diù remanentia, elongata, subemarcida, lineari-lanceolata, basi valdè attenuata, filamenta emarcida superantia. *Stamina*

numerosa, simplici serie hypogyna, æquidistantia, distincta. *Filamenta* subulata, glabra, omnia antherifera. *Antheræ* oblongæ, obtusæ, paulò supra basin emarginatam insertæ; connectivo angusto; loculis parallelis longitudinaliter dehiscentibus. *Pollen* subglobosum, hispidulum. *Ovarium* ovatum, sessile, pube stellatâ copiosâ, 4-loculare; loculis dispermis; ovulis erectis, collateralibus, cuneato-obovatis. *Stigmata* 3—4 (quandoque 5), indivisa, semiteretia, papillosa. *Pericarpium* evalve, pergameneo-crustaceum, subglobosum, calyce aucto patulo, filamentis emarcidis, et diù [240] petalis elongatis sed calyce brevioribus cinctum, ruptile, monospermum. *Semen* subsphæroideum, glabrum, irregulariter sulcis nonnullis longitudinalibus lobatum; umbilico nudo (nec strophiolato) prope basin lateris interioris.

Dr. Wallich, with whom the name *Actinophora fragrans* originates, and with whose specimens the plant here described and figured entirely agrees, has given no other account than that it was introduced into the Calcutta Botanic Garden in 1825, from the Isle of France. There is, however, no sufficient reason to believe that *Actinophora* is indigenous either in that island or in Bourbon or in Madagascar, whereas it is certainly a native of Java, Dr. Horsfield having found it in several districts, chiefly in the medial and eastern parts of the island, in teak forests in a rich soil, or in low ridges extending to the sea-shore. He adds that the wood, which is very hard and durable, is used for various domestic and mechanical purposes, and that it is so ponderous as to be occasionally employed for anchors of small native praoes and canoes. Its Javanese name is *Walli-kookoon*.

With respect to the affinities of *Actinophora*, it certainly does not belong to *Buttneriaceæ* as I originally defined it, but this may equally be said of several genera at present included in that order, and which like *Actinophora* are more obviously referable to *Tiliaceæ*; at the same time, as I observed in proposing the separation of *Buttneriaceæ*, these two families gradually pass into each other.

From all the genera of *Tiliaceæ* at present described, *Actinophora* is readily distinguishable; its more remarkable characters being the enlarged subfoliaceous spreading calyx, accompanying the crustaceous evalvular monospermous pericarpium.

Tab. XLVI. *Fig.* 1. A branch of *Actinophora fragrans*, of the natural size. *Fig.* 2. A flower just before expansion, with the calyx removed. *Fig.* 3. A stamen, magnified. *Fig.* 4. The ovarium, cut open longitudinally, crowned with the stigmata. *Fig.* 5. An ovule. *Fig.* 6. The fruit, with the enlarged persistent calyx, petals and stamina. *Fig.* 7. The enlarged calyx, seen from without. *Fig.* 8. The fruit, separated and slightly enlarged. *Fig.* 9. The same, cut open and with the seed removed. *Fig.* 10. The seed. *Fig.* 11. The convoluted cotyledons.

241]

SARCOSTIGMA HORSFIELDII.

Tab. XLVII.

Sarcostigma, *Wight and Arnott in Edin. New Philos. Journ.* xiv, p. 299 (1833).

Char. Gen. *Flores* unisexuales (dioici). *Perianthium* duplex; utrumque calycinum 5-fidum (rarò 4-fidum); interius intra exterius sessile, æstivatione valvatâ. Masc. *Stamina* 5 (rarò 4), tubo brevissimo perianthii inserta, ejusdem laciniis alternantia, exserta. *Antheræ* versatiles. Fem. *Ovarium* uniloculare, biovulatum; ovulis ab apice cavitatis pendulis. *Stigma* sessile, depresso-capitatum, indivisum. *Pericarpium* drupaceum, perianthio utroque, interiore indurato, subtensum. *Semen* . . . .

Frutices *volubiles, tenuè pubescentes, glabriusculi.* Folia *alterna, simplicia, integerrima, penninervia, reticulato-venosa, coriacea, petiolata, exstipulata.* Spicæ *e glomerulis alternis paucifloris indivisæ.*

Sarcostigma *Horsfieldii*, foliis obovato-oblongis, spicarum rachibus perianthioque interiore extùs pubescentibus.

Loc. Nat. In provinciâ orientali Blambangan, ubi anno 1806 et in pago Pagetan anno 1809 detexit *D. Horsfield.* Javanis *Kamaras.*

Descr.—Frutex volubilis, ramosissimus; caule tereti (diametro sæpè bipollicari, *D. Horsfield*). Folia alterna, petiolata, exstipulata, integerrima, coriacea, glabra, impunctata, penninervia, reticulato-venosa, obovato-oblonga, extra medium paulò latiora, quandoque acutiuscula, nunc obtusissima et emarginata, 5—6 pollicaria, ultra duos pollices lata. Petioli teretes, semunciales, juxta basin arcuatim recurvi. Spicæ longæ, sæpiùs 2—3 aggregatæ quandoque solitariæ, nunc rameæ absque cicatrice folii delapsi, nunc axillares, indivisæ sed e glomerulis alternis 3—4 floris formatæ; rachi tereti pedicellisque flosculorum, perianthio brevioribus, extùs pubescentibus. Flores parvi. Perianthium exterius abbreviatum, 5-lobum lobis rotundatis; interius æstivatione valvatâ altè 5-fidum; laciniis planis, lanceato-linearibus, acutis, intùs glabris, supra medium recurvis. Stamina 5: filamenta laciniis perianthii [242 interioris alternantia, ejusdem tubo inserta, filiformia, lacinias limbi æquantia v. superantia. Antheræ versatiles, ovales; loculis parallelis, approximatis, longitudinaliter dehiscentibus. Rudimentum pistilli parvum, pubescens. Fem. perianthii, ut in Masc. interioris, laciniis apice recurvis. Ovarium ovatum, pubescens, uniloculare, biovulatum; ovulis collateralibus, ab apice cavitatis pendulis. Pericarpium drupaceum, oblongum, ipsâ basi perianthio interno indurato vix aucto subtensum; putamine crasso-pergameneo, rugoso (pulpâ succulentâ eduli, *D. Horsfield*). Semen . . . .

My remarks on the affinities of *Sarcostigma* are annexed to the account of the following genus, *Iodes*.

Tab. XLVII. *Fig.* 1. Flowering branch of a female plant of *Sarcostigma Horsfieldii*. *Fig.* 2. Part of a male spike; both of natural size. *Fig.* 3. A male flower, moderately magnified. *Fig.* 4. A male flower with quaternary division; probably a rare occurrence. *Fig.* 5. A stamen, to show the mode of dehiscence and insertion of filament. *Fig.* 6. The outer floral envelope or calyx. *Fig.* 7. A female flower, magnified in the same degree as the male; to show the expansion, recurvation, and external pubescence of the segments of the inner perianthium or corolla. *Fig.* 8. An ovarium, slightly magnified and cut open to show the two pendulous ovula. *Fig.* 9. A drupe, nearly ripe, natural size.

IODES OVALIS, *Bl.*

243] TAB. XLVIII.

IODES, *Blume*, *Bijdr.* p. 29.

CHAR. GEN. *Flores* unisexuales (dioici), 5-fidi. *Perianthium* duplex: utrumque calycinum; interius 5-partitum, majus, æstivatione valvatâ. Masc. *Stamina* 5, tubo abbreviato perianthii (corollæ?) inserta, ejusdem laciniis alternantia iisque breviora. *Antheræ* stantes. Fem. *Ovarium* uniloculare, biovulatum; ovulis ab apice cavitatis pendulis. *Stigma* sessile, depresso-capitatum, umbilicatum. *Drupa* exsucca, stigmate apiculata. *Semen* unicum: *Albumen* semini conforme; *Embryo* dimidio albumine longior; *Radicula* supera.

Frutex *volubilis, cirrhis axillaribus scandens;* foliis *oppositis, integerrimis, petiolatis, exstipulatis;* floribus *parvis, paniculatis, axillaribus.*

IODES *ovalis*, Blume, Bijdr. p. 30 (1825); Hasskl. Hort. Bogor. p. 172, n. 798.

Loc. Nat. In plagis orientalibus primùm 1806 et postea in variis locis detexit *D. Horsfield.* Javanis *Jungetan* et *Jagal-Kedang.*

DESCR. Frutex (quandoque subarborescens, *D. Horsfield*) pubescens, scandens, cirrhis axillaribns indivisis nunc oppositifloris. Folia opposita, petiolata, exstipulata, coriacea, penninervia, reticulato-venosa, ovata, acuta, basi obtusa, 4—5-uncialia, ultra 2 pollices lata; petioli semunciales, teretiusculi. Paniculæ axillares, compositæ, corymbosæ. Flores parvi, pubescentes (odorati *D. Horsfield*). Masc. Stamina 5, perianthio interiori (corollâ potiùs) aliquoties breviora, ejusdem laciniis alternantia; filamentis brevissimis; antheris basifixis, loculis approximatis parallelis longitudinaliter dehiscentibus. Rudimentum pistilli. Fem.

Floribus paulò post anthesin solùm visis, et tunc etiamque fructu maturo perianthio unico tantùm persistenti nec aucto nec indurato. Drupa exsucca, rugosa, magnitudine pisi majoris. Semen unicum maturescens; albumen carnosum, album, magnitudine seminis; Embryo respectu pericarpii inversus; Cotyledonibus subrotundis, planis, foliaceis; Radiculâ rectâ, brevissimâ, superâ.

Obs. I. Botanists are not agreed as to the light in [24 which the two floral envelopes of *Sarcostigma* and *Iodes* are to be viewed. Both Klein, in describing the plant from which *Sarcostigma* was formed, and Blume, in his character of *Iodes*, have termed the outer envelope calyx and the inner corolla; while Drs. Wight and Arnott, by whom the genus *Sarcostigma* was established, have considered the outer envelope an involucrum and the inner calyx. In support of this opinion the persistence and even induration of the inner envelope in *Sarcostigma* would no doubt be adduced; but they were also, it may be supposed, determined by referring their genus to *Hernandiaceæ*, there being in *Hernandia* an undoubted involucrum, but that involucrum containing several flowers. On the other hand, the alternation of division of the two envelopes, and their close approximation in both these genera, are characters of at least equal importance; to which may be added the many analogous points of structure between these genera and *Cardiopteris*, in which it will hardly be disputed that both calyx and corolla are present.

Obs. II. As to the affinities of *Sarcostigma* and *Iodes*, the former genus was referred by Wight and Arnott to *Hernandiaceæ*, a family proposed by Blume in his 'Bijdragen,' p. 550, and adopted by Endlicher, consisting of *Hernandia* and *Inocarpus*, two genera which do not appear to me very nearly related to each other, and from both of which *Sarcostigma* is readily distinguished by many important characters. In the following year Professor Arnott, in describing *Nansiatum* of Dr. Buchanan Hamilton, proposed to place it next in affinity to *Phytocrene* of Wallich (*Gyno-*

cephalum of Blume), and to form of these two genera the new family of *Phytocreneæ*. It is remarkable that he did not also include in this family *Sarcostigma*, which so obviously belongs to it: this has been recently done by M. Planchon, who also justly proposes to add *Iodes*, appended by Blume to *Menispermeæ*, as well as *Miquelia* or *Jenkinsia*, which he regards as distinct genera, but which I think ought to be united. He also includes *Pyrenacantha*, properly united with *Adelanthus* of Endlicher; but this genus I exclude, admitting, however, its near relationship.

Of PHYTOCRENEÆ so constituted I subjoin the distinguishing characters of the family, as well as the differential characters of the genera belonging to it.

PHYTOCRENEÆ, *Arnott, in Edinb. New Phil. Journ.* xvi, p. 314 (1834).

Flores diclines (dioici), inconspicui. *Perianthium* duplex (*Calyx* et *Corolla*) utrumque 4—5-fidum, calycinum; interius majus, æstivatione valvatâ, intra exterius in quibusdam pedicellatum. MASC. *Stamina* 4—5, laciniis perianthii interioris alternantia; *filamenta* nunc hypogyna et ipsâ basi coalita, nunc tubo perianthii inserta; *Antheræ*: loculis longitudinaliter dehiscentibus. Rudimentum *pistilli*. FEM. *Ovarium* liberum, uniloculare, biovulatum; ovulis ab apice cavitatis suspensis. *Stigma* sessile, indivisum v. bifidum. *Drupa* monosperma. *Albumen* semini conforme; *Embryo* magnitudine fere albuminis, cotyledonibus foliaceis.

Frutices *volubiles v. scandentes; foliis alternis rarò oppositis, integerrimis v. lobatis, exstipulatis.*

PHYTOCRENE, *Wallich, Pl. Asiat. rar.* vol. iii, p. 11, t. 216.

Flores utriusque sexûs 4-fidi, capitati. *Stamina* hypogyna. *Antheræ* versatiles. *Stigma* bilobum, obtusum.

Folia *indivisa v. lobata.*

SARCOSTIGMA, *Wight* and *Arnott, in Edinb. New Phil. Journ.* xiv, p. 299.

Flores spicati, 5-fidi (rarò 4-fidi). *Stamina* tubo perianthii inserta, ejusdem laciniis longiora. *Antheræ* versatiles. *Stigma* depresso-capitatum. *Drupa* pulposa.

Frutices *volubiles;* foliis *alternis integerrimis.*

IODES, *Blume.* [245

Flores 5-fidi, paniculati. *Stamina* tubo perianthii longioris inserta, ejusdem laciniis breviora. *Antheræ* stantes. *Stigma* depresso-capitatum. *Drupa* exsucca.

Frutex *cirrhis axillaribus scandens;* foliis *oppositis, integerrimis.*

NANSIATUM, *Buchanan Hamilton, in Edinb. New Phil. Journ.* xvi, p. 314.

Flores 5-fidi, spicati. *Stigmata* duo, acuta, recurva. *Pericarpium* . . . . .

Suffrutex *volubilis;* foliis *alternis, indivisis.*

MIQUELIA, *Meisn. Gen.* 152. JENKINSIA, *Griffith, in Calc. Journ. Nat. Hist.* iv, p. 231, t. 12.

Flores 5-fidi. MASC. *Perianthium* interius intra exterius pedicellatum. FEM. *Perianthium* interius intra exterius sessile. *Stamina* sub ovarii rudimento inserta. *Stigma* depresso-capitatum, umbilicatum. *Drupa* exsucca.

Suffrutices *volubiles;* foliis *alternis, integerrimis.*

Phytocreneis affine genus,

PYRENACANTHA, *Hooker, Bot. Misc.* ii, p. 107, *Tabb.* Suppl. 9, 10.

Pyrenacantha *Adelantho* congener, a *Phytocreneis* diversum: *Perianthio* simplici; *Stigmate* radiatim multifido:

quadrat *Staminibus* cum calycis segmentis alternantibus; *æstivatione* valvatâ; *Pericarpio* indehiscente.

Tab. XLVIII. *Fig.* 1. A flowering male branch of *Iodes ovalis*. *Fig.* 2. The outer perianthium. *Fig.* 3. The deeply divided inner perianthium or corolla. *Fig.* 4. An anthera burst longitudinally, with insertion at base. *Fig.* 5. Rudiment of ovarium in male flower. *Fig.* 6. Ovarium after flowering, subtended by one only of the perianthia. *Fig.* 7. The same laid open, to show the number and insertion of ovula. *Fig.* 8. A ripe drupe, natural size. *Fig.* 9. The seed. *Fig.* 10. The seed cut open lengthways, to show the relative proportion of albumen and embryo. *Fig.* 11. The embryo inverted in respect to pericarpium.

CARDIOPTERIS LOBATA, *Wall. List*, n. 8033. [246

TAB. XLIX.

CARDIOPTERIS, *Wallich.*

CHAR. GEN. *Flores* hermaphroditi? (v. monoici). *Calyx* 5-partitus, æstivatione imbricatâ, persistens. *Corolla* monopetala, rotata, limbo æquali 5-fido, æstivatione imbricatâ, decidua. *Stamina* 5, tubo corollæ sub sinubus limbi inserta. *Antheræ* longitudinaliter dehiscentes. *Ovarium* liberum, uniloculare, biovulatum; *ovulis* pendulis. *Stigmata* duo: altero (vero) post anthesin aucto, emarginato, tardè deciduo: altero (effœto) capitato, pedicellato, persistenti. *Samara* compressa, alata, monosperma. *Albumen* semini conforme. *Embryo* minutissimus, in apice (respectu pericarpii) albuminis.

Plantæ *annuæ v. biennes, volubiles, glabræ, lacte albo scatentes* (fid. *D. D. Blume* et *Hasskarl*); Foliis *alternis, petiolatis, exstipulatis, v. lobatis v. integerrimis, cordatis, venosis;* Cymis *furcatis v. dichotomis v. paniculatis;* floribus *parvis, secundis, ebracteatis.*

CARDIOPTERIS *lobata* (Wall. List, n. 8033), foliis angulato-lobatis, cymis furcatis v. semel dichotomis.

Cardiopteris javanica, *Blume, Rumphia,* vol. iii. p. 206, tab. 177.

Peripterygium quinquelobum, *Hassk. Hort. Bogor.* p. 235.

An Dioscorea sativa? *Kœnig, MSS. in Mus. Brit.* vol. iii. p. 81; exclus. syn. *Rumph. Amb.* tom. v. p. 482, ad Cardiopteridem moluccanam, *Blume, Rumph.* vol. iii. p. 207 pertinente.

Loc. Nat. In plagis orientalibus et medianis Javæ; in planitiis haud multum elevatis supra mare anno 1806 primùm detexit *D. Horsfield.* Javanis orientalibus *Parianom,* medianis *Kanjar Kawang* vel *Rindengan* appellata.

Descr.—Planta annua? volubilis, glaberrima, præter raches spicarum tenuissimè pubescentes pube acutâ simplici. Rami ramulique flexiles, striati, inanes. Folia alterna, remota, elongato-petiolata, exstipulata, flaccidè membranacea, angulato-lobata, altè cordata; lobo medio acuminato cum mucronulo brevi; reliquis obtusis, muticis; diametro 2—3-pollicari; basi nervis 5—7 lobis respondentibus, immersè reticulato-venosis. Cymæ axillares, pedunculatæ, semel v. bis furcatæ. Flores unilaterales, ebracteati, brevissimè pedicellati, parvi, caput aciculæ mediocris vix superantes. Calyx 5-partitus, æqualis, membranaceus, texturâ subcorollinâ, æstivatione imbricatâ; sepalis ovatis, obtusiusculis, marginibus tenuissimè ciliatis, subenerviis, axi parùm opaciore. Corolla monopetala, calycem vix superans, subrotata, virescenti-alba, glaberrima; tubo perbrevi, limbo 5-partito æquali; laciniis obovatis, obtusis, concaviusculis, obsoletè immersè venosis, æstivatione imbricatis. Stamina 5, epipetala, æqualia, corollâ breviora, ejusdem sinubus inserta. Filamenta brevia, filiformia, glabra. Antheræ pro ratione flosculi majusculæ, didymæ, utrinque profundè emarginatæ; connectivo membranaceo angusto; loculis appositis, longitudinaliter dehiscentibus. Discus hypogynus nullus. Ovarium uniloculare, biovulatum; ovulis collateralibus, ab apice cavitatis pendulis, altero sæpè minore effœto. Stigmata duo: alterum (imperfectum) sub anthesi magìs conspicuum, stylo manifesto insidens, capitatum, læve nec papillosum; alterum (perfectum) sub anthesi vix obvium, posteà sensim valdè auctum, demùm emarginatum, superficie interiore imperfectum spectante papillosum. Samara obcordata, nitida, vix uncialis, ipsâ basi angustatâ calyce persistenti vix aucto conniventi subtensa; alâ marginatâ utrinque ipso nucleo subcylindraceo ter quatervè latiore pergameneâ; stigmate vero plurimùm aucto emarginato, tardè deciduo, stigmate effœto, capitato, pedicellato, persistenti, haud mutato, subemarcido, coronata.

Semen unicum, testâ? cum samaræ cavitate cohærens et omninò replens, striatum, subcylindraceum; integumentum prætereà unicum, membranaceum, albumini arctè adhærens. Albumen semini conforme, aqueo-pallidum, densè carnosum. Embryo in apice (respectu pericarpii) albuminis, minutissimus; radicula brevis, supera; cotyledon adhucdum indivisus, subglobosus, obtusissimus.

Obs. There are some points both in the botanical history and in the structure of the genus *Cardiopteris* which deserve to be specially noticed. It is probable that a short time before the publication of the 10th edition of his 'Systema Naturæ,' in 1759, Linnæus had particularly examined the figures of the 'Herbarium Amboinense,' for in that edition almost the only figures quoted of the different species of *Dioscorea* are those of that work, and under *Dioscorea sativa* he refers to *Olus sanguinis,* vol. v, p. 482, tab. 180, which is an undoubted and a tolerably good representation of *Cardiopteris moluccana* of Blume; and in proof of Linnæus having no doubt as to the correctness of his reference, he has in his own copy of the work written *Dioscorea sativa* under the figure quoted. This synonym is adopted by Willdenow in his edition of 'Species Plantarum.' J. G. Kœnig, in vol. iii, p. 81 of his manuscripts, formerly in Sir Joseph Banks's Library, now in the Banksian or Botanical Department of the British Museum, quotes the same figure of Rumphius (with a doubt, however, as to the correctness of Linnæus's reference to *Dioscorea*) for a plant which is no doubt *Cardiopteris lobata,* from his description in many respects very good, and with regard to stigma more nearly correct than some recent accounts. Kœnig considers his plant to be monoicous, as does Hasskarl (*supr. cit.*): I also entertained the same opinion, having never found flowers with completely developed pistillum in which the corolla and consequently stamina were present. This, however, might depend on the advanced state of the flower whose corolla had fallen soon after expansion. Dr. Blume, therefore, is perhaps more correct in considering the flowers as hermaphrodite, and I am inclined to adopt his view. His statements respecting the structure of the pistillum are more liable to objection: he describes the ovulum as orthotropous, having the micropyle at its lower extremity, and the embryo consequently existing at the same point of the seed; my own observations, which may indeed require to be verified, placing the embryo 248] at the upper extremity, or close to the insertion of the seed, the ovulum being consequently anatropous. The external structure of the pistillum is very singular. In an early stage of the flower, immediately before or even at the time of expansion, there are apparently two stigmata: of these the more obvious is capitate, undivided, fleshy, but not papillose, and is supported on a distinct style; the second is quite sessile, much shorter in this stage than the capitate branch, and having its upper or inner surface distinctly stigmatic or papillose. In the next stage, the latter, which I regard as the efficient stigma, gradually enlarges, becoming longer than the capitate organ, which in my opinion is an imperfect stigma; and as in this stage the ovarium though enlarged has not perceptibly increased in diameter, this capitate stigma has the appearance of being lateral. The perfect stigma, which continues to lengthen, its upper surface becoming more evidently hispid or papillose, not unfrequently remains crowning the samara even when ripe; but frequently also it is then deciduous, while the imperfect capitate stigma, which has undergone no change either in size or surface, more generally remains after the real stigma has fallen.

In one of the flowers of a specimen preserved in spirits by Dr. Wallich, and in which the corolla was wanting, and a slight enlargement of ovarium had taken place, I found only one ovulum, the lower extremity of which seemed in some degree to support Dr. Blume's account of the position of micropyle. In a second flower of the same specimen only one apparently perfect ovulum existed, but the funiculus or remains of a second was visible; in the perfect ovulum a more transparent point, which might possibly be micropyle, was lateral; and in a third flower, long after fœcundation, the samara being distinctly formed though not of its full size, I was able to observe only one ovulum, suspended from a funiculus which was continued on one side into a raphe ending at the lower and wider extremity of the ovulum. These appearances leave the question of the original position of micropyle undetermined.

Dr. Blume considers the capitate body as the true stigma, and I have some reason to believe that this is also the opinion of an excellent and more recent observer. I have little doubt, however, that the emarginate or bidentate branch is the organ performing the function. In connection with and in support of this opinion, I regard the ovarium or pericarpium of *Cardiopteris* as composed of two carpella, the line of junction being in the axis of the samara. This I infer from the relative position of the supposed perfect and imperfect stigmata, the former presenting its papillose surface to the latter, and both being in the plane of the wings of the samara; and these wings, as well as I can judge, being anterior and posterior with relation to the axis of the unilateral spike.

With respect to the affinities of *Cardiopteris*, Dr. Wallich, with whom the genus originated, and who first hazarded a conjecture on the subject, was disposed to refer it to *Sapindaceæ*; Hasskarl (l. supra cit.) has placed it among *Euphorbiaceæ;* and Blume, who considers it as forming a separate family (*Cardiopterideæ*), has placed this family in proximity with *Verbenaceæ* and *Borragineæ*. None of these approximations appear to me satisfactory, and although I am aware of several important objections to the view, I am inclined to consider *Cardiopteris* as an isolated genus or family to be placed at no great distance from *Phytocreneæ*, chiefly through *Iodes*, under which genus I have given some account of that family.

Tab. XLIX. *Fig.* 1. A branch of *Cardiopteris lobata*, in flower and fruit, natural size. *Fig.* 2. An expanded flower, slightly magnified, which shows the relative proportion of calyx, corolla, and stamina, and the external appearance of pistillum, of which the capitate stigma has nearly attained its full size, while the true stigma is as yet barely visible. *Fig.* 3. A corolla laid open, to show that it is monopetalous, that the stamina are inserted below the sinuses, and that its segments are slightly ciliated, somewhat more magnified than figure 2. *Fig.* 4. The corolla removed, to show more distinctly the external structure of pistillum. *Fig.* 5. A stamen. *Fig.* 6. The calyx surrounding the somewhat enlarged pistillum, on which, from the elongation of the true emarginate stigma, the capitate or spurious stigma has become apparently lateral. *Fig.* 7. A ripe seed-vessel, natural size, with its short pedicle covered by the withered calyx, and crowned by the two stigmata, of which the true or emarginate has greatly increased in size, especially length, while the capitate, not at all enlarged, is barely visible. *Fig.* 8. A seed slightly magnified. *Fig.* 9. The embryo separate, magnified more than fig. 8, and so placed as to indicate that it must have been situated at the upper extremity of the seed.

BENNETTIA JAVANICA. [249

TAB. L.

BENNETTIA.

CHAR. GEN. *Flores* unisexuales (dioici), regulares, 5-fidi (minimi). *Calyx* 5-partitus. *Petala* 5 concava, æstivatione marginibus inflexis mutuò applicitis valvata. Masc. *Stamina* 10, petalis sæpiùs cucullatis inclusa. *Antheræ* loculis longitudinaliter dehiscentibus. Fem. *Ovarium* uniloculare, biovulatum, ovulis pendulis. *Stigmata* 3—4, filiformia, uno alterove quandoque bipartito. *Drupa* latior quam longa, monosperma. *Semen* figurâ drupæ. *Albumen* magnitudine seminis. *Embryo* transversus, rectus, longitudine fere albuminis; radicula alteri margini approximata, recta, cotyledonibus foliaceis.

Arbusculæ; foliis *simplicibus, alternis, integerrimis,* stipulis *lateralibus, sæpiùs caducis.* Spicæ *ramulos graciles terminantes, solitariæ, longissimæ, pendulæ.*

BENNETTIA *javanica,* masculi floris petalis altè cucullatis glabris: alabastro ultra medium 5-fido depresso lobis retusis, antheris rudimentoque pistilli imberbibus, drupis paulo tantum latioribus quam longis, foliis utrinque ramulisque glabris.

Loc. Nat. In plagis Javæ orientalibus, ubi primum detexit anno 1806 *D. Horsfield;* et anno 1814 regionibus medianis Insulæ observavit. Javanis orientalibus *Klimo Koncher;* medianis *Jirikan* appellata.

DESCR. *Arbuscula* glabra, ramosissima, ramulis virgatis. *Folia* alterna, integerrima, stipulata, brevè petiolata, impunctata, oblonga, super glabra, subter secundum nervum et venas saltem primarias tenuissimè pubescentia. *Stipulæ* laterales, angusto-subulatæ, petiolo paulo breviores, caducæ. *Spica* terminalis, solitaria, longissima (usque pedalis), indivisa, nutans; *mascula* e fasciculis 4—5-floris approximato-alternis, sessilibus, pedicellis unifloris basi unibracteatis superne ebracteatis; *feminea* floribus solitariis. *Flores masculi* parvi, caput aciculi mediocris subæquantes. 250] *Calyx* 5-partitus, æqualis, patens, laciniis planis acutiusculis pubescentibus, pube brevissimâ simplici acutâ. *Petala* 5, cum laciniis calycis alternantia, patentia, altè cucullata, obovata, glabra, apice cuculli retuso, calyce plus duplò longiora, brevissimè unguiculata, axi laminæ intùs incrassatâ prominulâ, æstivatione marginibus inflexis mutuò applicitis valvatâ, alabastro depresso 5-lobo. *Stamina* decem distincta. Filamenta brevissima, latiuscula, sepalis et petalis opposita. *Antheræ* biloculares, loculis connectivo lato distinctis longitudinaliter dehiscentibus; omnes cucullis petalorum semi-inclusæ, ita ut duæ petalo singulo oppositæ esse videantur (exterior interiorque), sed dum exterior ad filamentum petalo oppositum pertinet, interior e loculis respondentibus filamentorum duorum petalis alternantium formata est. *Pollen* simplex, sphæroideum. *Rudimentum pistilli* subovatum, apice depresso indiviso. *Feminei flores* paulo post fecundationem solum visi; petalis concavis haud cucullatis. *Ovarium* sphæroideum, 4—5-sulcum, pubescens, basi calyce parvo subtensum, stigmate triplici vel duplici singulo bifido v. laciniato coronatum, uniloculare, biovulatum, ovulis apici cavitatis affixis, collateralibus, latioribus quam longis, transversim oblongis, utroque angulo acutiusculo. *Drupa* paulò nec duplò longior quam lata, tenuissimè pubescens, pulpâ parcâ; putamine intùs venoso, basi excavato, depressione latâ longitudine totius baseos in cujus centro calyx persistens haud auctus. *Semen* unicum, apici cavitatis affixum, transversim ovale: integumento (testâ ?) simplici. *Albumen* semini conforme, carnosum. *Embryo* transversus, longitudine ferè albuminis. *Cotyledones* foliaceæ, quoad apicem cavitatis accumbentes, ovales. *Radicula* recta cotyledonibus multoties brevior, margini alteri approximata.

Obs. *Bennettia* is dedicated to the principal author of the present work, John Joseph Bennett, Esq., my friend and colleague in the British Museum.

The generic characters of *Bennettia* are clear and important, but the affinities of the genus, or its place in a natural arrangement, though determinable, are not equally obvious. Many important points of agreement will readily present themselves between *Euphorbiaceæ* and *Bennettia*, but the general resemblance it bears to *Antidesmeæ* is still more striking. In their simple entire alternate leaves with lateral deciduous stipules and in their inconspicuous unisexual flowers they entirely agree, very nearly also in inflorescence, in the structure of ovarium, in their monospermous drupaceous pericarpium, and lastly, in the presence and texture of albumen, and in the degree of development of embryo. The principal distinctions would therefore be reduced to the existence of petals in *Bennettia*, to its stamina being equal in number to the divisions or parts of both floral envelopes, to a remarkable and obvious difference in the structure and æstivation of antheræ, and to the singular character of its transverse embryo. The presence of petals may even be regarded as of more than ordinary importance, their usual form in the male flower being necessarily connected with the æstivation of stamina. According to this view, therefore, *Bennettia* may be said to bear the same relation to *Antidesma* (for *Antidesmeæ* contains at present no other well-established genus) that the polypetalous bear to the apetalous genera of *Euphorbiaceæ*. But according to a principle which I proposed for adoption in 1810, *Bennettia* ought not only to determine the place, but also give the name (*Bennettiaceæ*) to the family. The principle referred to is stated in the 'Prodromus Floræ Novæ-Hollandiæ,' p. 351, in a note relative to *Combretaceæ* (an order then first proposed and characterised), in the following terms:—"Hunc ordinem inter polypetalos posui, non solum propter petalorum in pluribus existentiam, sed quia vera natura partium affinitatesque ordinum, ex contemplatione generum in quibus structura magis evoluta quam ex iis in quibus aliqua pars suppressa, tutius erui queant." In 1814, in conformity with the same principle, I placed among polypetalæ *Euphorbiaceæ*, a family to which the same reasoning is still more strikingly applicable. It is not my intention, however, to propose any change in this respect, for in both cases the names must be considered as established.

251] The affinity between *Euphorbiaceæ* and *Antidesmeæ* is rendered more obvious by the addition to the latter of *Bennettia*. But the structure of ovarium and the monospermous drupaceous pericarpium readily distinguish them. *Iodes* and *Sarcostigma* also agree with *Bennettia* in several important points, particularly in their unisexual minute flowers, ovarium with two pendulous ovula, monospermous drupa, and in most respects in the structure of seed. They differ in habit, being twining or scandent shrubs without stipules, in their monopetalous persistent inner perianthium or corolla, in æstivation and reduced number of stamina, in structure of antheræ, and in the embryo being inverted, not transverse.

OBS. II. Several species of *Bennettia* have been discovered in India. One of these, first observed by the late Dr. Jack, at Singapore, was referred by him, though doubtfully, to *Limonia*. Dr. Blume, who had observed a plant of the same genus in Java, for which he adopted the generic name here proposed, having liberally communicated specimens and drawings of this plant, it proves to be identical with *Bennettia javanica*; and lastly, Dr. Wallich has, in the concluding distribution of his great Indian Herbarium, noticed several plants of the same genus, to which he has also given the name *Bennettia*. These plants so closely resemble *Bennettia javanica* and each other, that they are chiefly distinguishable by minute, but, as I believe, constant differences in their male flowers, and in the form of their fruits. Of these supposed species the differential characters are here subjoined.

Bennettia *Wallichii*, masculi floris petalis concavis vix cucullatis glabris, antheris rudimentoque pistilli imberbibus, drupis transversim oblongis duplò latioribus quam longis varicosis, ramulis foliisque utrinque glaberrimis.

Doc. Nat. India Or. Tavoy. *Wall. List*, 8585 E.

B. *phlebocarpa,* drupis latè cordatis sinu clauso reticulato-venosis paulo latioribus quam longis, foliis oblongis subacuminatis utrinque glabris.

Loc. Nat. Singapore. *Wall. List,* 8585 D.

B. *Finlaysoni,* masc. petalis modicè cucullatis glabris apice deflexo acuto: axi intùs elevatâ, antheris imberbibus, rudimento pistilli apice barbato, foliis oblongis acuminatis basi inæquilaterali subtùs nervo venis primariis ramulisque pubescentibus, spicis masc. foliis longioribus.

Loc. Nat. Pulo-Penang, b. Finlayson. *Wall. List,* 8585 B.

B. *affinis,* masc. petalis cucullatis glabris: axi intùs elevatâ, antheris imberbibus, rudimento pistilli apice barbato, stipulis ramulis venisque primariis subtùs pubescentibus, spicis folia lanceolato-oblonga acuminata subsessilia vix superantibus.

Loc. Nat. Pulo-Penang, b. Finlayson. *Wall. List,* 8585 B.

B. *pedicellata,* masc. petalis modicè concavis obtusis: axi intùs parum elevatâ, antheris filamentisque barbatis.

Obs. Sequenti nimis forsan affinis.

Loc. Nat. Pulo-Penang. *Wall. List,* 8585 C.

B. *Jackiana,* masc. petalis orbiculato-ovatis concaviusculis: axi intus haud elevatâ, antheris barbatis.

Loc. Nat. Pulo-Penang b. Jack, qui ad *Limoniam* dubitanter retulit. *Wall. List,* 8585 A.

TAB. L. *Fig.* 1. A flowering branch of the male [252 plant of *Bennettia javanica,* natural size. *Fig.* 2. An expanded male flower, slightly magnified. *Fig.* 3. A male flower before expansion. *Fig.* 4. A petal of the same flower, somewhat magnified. *Fig.* 5. Back view of one of the longer stamina, but in which the loculi are too divergent. *Fig.* 6. A front view of one of the shorter stamina. *Fig.* 7. A male flower, the petals and stamina removed, to show the calyx and rudiment of pistillum. *Fig.* 8. A drupe, slightly reduced. *Fig.* 9. The same,

longitudinally divided, which shows the single seed. *Fig.* 10. A seed, longitudinally divided to show its insertion, with the direction of the embryo and the relative proportion of its radicle and cotyledons.

CONTRIBUTIONS

TO THE

BOTANICAL MAGAZINE.

1811—1825.

CONTRIBUTIONS

TO THE

BOTANICAL MAGAZINE.

Zieria Smithii, Bot. Repos., No. 606.
Zieria lanceolata, *Brown in Herb. Banks.*
Bot. Mag. 1395 (1811).

Dillwynia parvifolia, Brown in Herb. Banks.
Bot. Mag. 1527 (1813).

Gomeza recurva.

Labellum ecalcaratum, indivisum, bicristatum, sessile, cum basi columnæ apteræ liberæ continuum. *Petala* 2 antica exteriorum connata, labello supposita. *Massæ pollinis* 2, hinc sulco obliquo bilobæ, apice connexæ processu communi stigmatis. *Brown MSS.*

Gomeza recurva, Brown MSS.

We are indebted to our friend, Robert Brown, Esq., for generic character and name, given to it in honour of Bernardinus Antonius Gomez, Physician to the Portuguese fleet, and author of *Botanico-Medical Observations* on the plants of Brazil, a very respectable work, written in the Latin and Portuguese languages.

Bot. Mag. 1748 (1815).

CYRTOPODIUM WOODFORDII.

Petala 5, distincta, secunda. *Labellum* trilobum, cum processu unguiformi baseos columnæ apteræ subarticulatum. *Massæ pollinis* 2, postice bilobæ. *Brown MSS.*

Cyrtopodium Woodfordii, labello ventricoso: lobis laminæ lateralibus intermedio verrucoso callis cristato brevioribus.

Cyrtopodium Andersonii, labello angusto unguiculato: lobis laminæ lateralibus divaricatis intermedio excavato longioribus.

Bot. Mag. 1814 (1816).

Anisomeles malabarica, tomentosa, subglandulosa, caule incano, foliis lanceolatis subtùs rugosis, verticillis multifloris, calycibus lanatis dentibus subulatis tubum æquantibus. *Brown MSS.*

Bot. Mag. 2071 (1819).

Pultenæa tenuifolia, capitulis terminalibus subbifloris, fructibus lateralibus, foliis subulato-linearibus muticis supra concavis subtus convexis ramulisque pilosis. *Brown MSS.*

Native of the south coast of New Holland, and probably of Van Diemen's Island. It was observed on several parts of the former by Mr. Brown, to whom we are indebted for enabling us to settle the species, and to distinguish it from the *vestita* of the "Hortus Kewensis," under which name we received it.

Bot. Mag. 2086 (1819).

Pultenæa biloba, capitulis terminalibus paucifloris, foliis cuneiformibus apice dilatato-bilobis supra tuberculato-scabies subtus sericeis; mucrone brevi marginibusque recurvis. *Brown MSS.*

We are indebted to our friend Mr. Robert Brown for

his assistance in determining the species, by whom it was first discovered in New South Wales.

Bot. Mag. 2091 (1819).

CHLORANTHUS MONOSTACHYS.

MONANDRIA MONOGYNIA.

* *Flores Apetali.*

Anthera lateri ovarii insidens (indivisa, bilocularis; vel triloba, 4-locularis). *Ovarium* monospernum, ovulo pendulo. *Stigma* capitatum. *Drupa.—Brown.*

Chloranthus monostachys, antheris incurvis trilobis indivisisve, spicis solitariis, floribus alternis. *Br.*

By the advice of Mr. Brown we have placed *Chloranthus* in the first class of the Linnean system, although, he observes, that only one known species is really and at the same time constantly monandrous (*C. monander*, Br.); for in *inconspicuus* and *elatior* (*Br.*) the three-lobed, four-celled anther, hitherto regarded as an antheriferous petal, is according to him composed of three confluent anthers, of which the middle one only is perfect or two-celled, corresponding with the anther of *monander*, the lateral being dimidiate or one-celled; and in *monostachys* both simple and compound anthers are found on the same spike.

Bot. Mag. 2190 (1820).

RULINGIA PANNOSA.

PENTANDRIA PENTAGYNIA.

(Inter Maherniam et Commersoniam.)

Petala 5, e cucullata basi ligulata. *Stamina* sterilia 5, indivisa (*Nectarium*, Linn.). *Ovarium* 5-loculare: loculis dispermis. *Capsula:* septis duplicatis dermum 5-partibilis. *Brown.*

Rulingia pannosa, capsulis echinatis exsertis, foliis dentato-serratis acutis planis supra scabris subtùs tomentosis: inferioribus ovatis subcordatis passimque lobatis; superioribus oblongo-lanceolatis. *Br. prodr. fl. nov.-holl.* 2 *inedit.*

Our friend Mr. Brown, to whom we are indebted for the above generic and specific characters, places this genus in the Natural system in his order of *Buttneriaceæ,* which he has defined in the appendix to 'Flinders's Voyage,' vol. ii, p. 540.[1]

It is nearly related to *Commersonia,* from which it differs in the number of sterile filaments, or divisions of the nectarium, in the cells of the ovarium being two-seeded, and in the capsule. Named in memory of John Philip Rüling, author of an essay on the 'Natural Orders,' in which he has published the ideas of Professor Büttner upon this subject. A greenhouse shrub, native of Port Jackson, in New Holland, where Mr. Brown discovered several other species of the same genus.

Bot. Mag. 2191 (1820).

SYMPHORIA RACEMOSA.

PENTANDRIA MONOGYNIA.

Germen 4-loculare: loculis 2 polyspermis, sterilibus; 2 monospermis, fertilibus. *Bacca* coronata. *Cor.* tubulosa, brevis, 5-fida, subæqualis. *Cal.* 5-dentatus. *Brown.* Loniceræ sp. *Linn.*

Symphoria racemosa, racemo interrupto subterminali, corolla intus barbata.

Germen ovate, with two or three small bracts applied close to the base. Mr. Brown has observed that it is four-celled, 2 of the cells bearing each several ovula, but which are always abortive; the other two having each a single seed, which alone come to maturity. An analogous circumstance takes place, he observes, in the fruit of *Linnæa*, and of *Abelia*, two nearly related genera belonging to the same family, the *Caprifoliaceæ*, in both which the germen is three-celled, two of the cells having several imperfect ovula, and the other a single ovulum, which alone comes to maturity. *Vide* 'Characters and Descriptions of Three New Species of Plants, found in China by Clarke Abel, Esq. By Robert Brown, F.R.S.' [*Ante*, p. 324.]

---

[1] [*Antè vol.* i, *p.* 11.]

Bot. Mag. 2211 (1822).

Dillwynia cinerascens, corymbis terminalibus sessilibus, foliis filiformibus erectis; mucrone innocuo brevissimo sub-recurvo, ramulis calycibusque sericeis. *Brown MSS.*

Mr. Brown possesses many species of this genus, which he divides into two sections; in one of which (*Xeropetalum*, Br.) these parts are marcescent. It is to the latter section that the present plant belongs. The three species recorded in the 'Hortus Kewensis' all belong to the first; and from this division the above generic character seems to have been more especially framed.

Bot. Mag. 2247 (1822).

JACARANDA OVALIFOLIA.

Cal. 5-dentatus. *Cor.* fauce campanulata: limbo bilabiato. *Filamentum* quintum sterile, longius, barbatum. *Caps.* ovata, bilocularis, bivalvis: dissepimento contrario, valvis pleniusculis adnato. *Semina* alata.—Arbores. Folia *opposita, abrupte rariusve impari-pinnata, pinnis impari-pinnatis.* Flores *paniculati, violacei.* Calyx *sæpius cyathiformis nunc breve campanulatus vel subcylindricus dentibus obsoletis.* Corollæ *æstivatio imbricata, labio superiore bre-*

viore bilobo equitante inferius, cujus lobus medius major indivisus, lateralibus tectus. Stamina *antherifera inclusa:* Antheræ *sæpius dimidiatæ, cum rudimento nano lobi alterius; nunc completæ, loculis æqualibus divaricatis apice solum connexis.* Brown MSS.

Jacaranda ovalifolia, antheris dimidiatis, corollis extus sericeis, foliolis pubescentibus; lateralibus ovalibus cum mucrone; terminali lanceolato. *Brown MSS.*

Jacaranda ovalifolia is very nearly related both to *J. acutifolia* and *J. obtusifolia* of Humboldt and Bonpland (*Plant. Æquinoct. tabs.* 17 *and* 18), between which it may be placed. *J. acutifolia* differs from it chiefly in all the leaflets being lanceolate, and in having a smaller number of pinnæ. *J. obtusifolia* is still more distinct in its leaflets entirely wanting the mucro, which is both obvious and constant in our plant, and in having a smooth corolla. *J. Bahamensis,* Nob. (*J. caroliniana,* Persoon; *Bignonia cærulea,* Linn.), of which there is in the Banksian Herbarium a single imperfect specimen that may be supposed to be authentic, and *J. rhombifolia,* of Meyer (*Flor. Essequeb.,* 213), which is probably not different from the plant found by the late Dr. Anderson, of St. Vincent, on the banks of the Essequebo, and cultivated in some of the gardens, under his name of *Bignonia filicifolia,* are easily distinguished from the three species already mentioned, by their rhomboidal leaflets, and from each other by differences in the surface of corolla, which is silky in *J. Bahamensis* and smooth in *J. rhombifolia.*

J. procera, Nob. (*Bignonia Copaia,* Aublet, *B. procera,* Willd.), is sufficiently different from all the others in the much greater size of its leaflets, which are frequently upwards of an inch in length; in the rachis of the pinnæ not being winged; and in the cylindrical calyx, of which the teeth are extremely minute.

In five of the above-mentioned species, I have ascertained that the antheræ are dimidiate, with a hardly visible rudiment of a second lobe; a structure which M. Meyer (l. c.) has expressed by "Antheræ simplices," and introduced into his character of the genus. But in an undescribed species lately found in Brazil (*J. tomentosa*, Nob.) they are perfect, consisting of two equal divaricate lobes, as in the greater part of the natural order. This species differs, indeed, from the rest of the genus in its leaves, having constantly a terminal pinna. It agrees with them, however, in all the other characters of the flower, and entirely in the structure of its fruit; it can therefore be regarded as forming only a section of a strictly natural and well defined genus, still depending on characters not materially different from those proposed for it by M. de Jussieu; the only doubtful species being the *Jacaranda* 2, of Piso, from which the generic name was adopted. *Brown.*

Bot. Mag. 2327 (1822).

BRACHYSTELMA TUBEROSA.

Asclepiadea. *Corolla* campanulata; sinubus angulatis. *Columna* inclusa. *Corona* 1-phylla, 5-fida: lobis antheris oppositis, dorso simplicibus. *Antheræ* absque membranâ apiculari. *Massæ pollinis* erectæ, basi insertæ. *Brown MSS.*

Brachystelma tuberosa. *Brown MSS.*

Stapelia tuberosa, Meerb. ic. t. 54, f. 1, Monente D. Aiton.

Mr. Brown, in his valuable treatise on the "Natural Orders of *Asclepiadeæ* and *Apocineæ*," published in the first volume of the 'Transactions of the Wernerian Society,' has divided the genus *Stapelia*, but our present plant will not unite with any of the genera there established; we are therefore highly indebted to the friendship of this learned botanist, for enabling us to establish the genus of this very rare plant.

Meerburg's figure, above quoted, which was pointed out to Mr. Brown by Mr. Aiton, represents the flower much larger than in our specimen, with the segments elongated to a very narrow point.

Bot. Mag. 2343 (1822).

Arthropodium cirratum, racemo diviso, bracteis foliaceis, pedicellis fasciculatis, petalis interioribus integerrimis, filamentorum dimidio barbato basi biappendiculato, foliis lanceolato-ensiformibus. *Brown MSS.*

Anthericum cirratum, foliis lanceolatis planiusculis, scapo paniculato, filamentis bicirratis. *Forster Prodr. Fl. Austr.*, p. 24. Willd. sp. pl. 2, p. 146. Anthericum latifolium, *Banks and Sol. MSS.*

Another species of *Arthropodium*, the *paniculatum*, will be found at No. 1421 of this work; from which our present plant differs in the much greater width of the leaves and revolute bractes; greater size of its white flowers; and both from that and every known species in the greater length of the spur-like processes at the base of the bearded part of the filaments, of which Mr. Brown could only trace mere rudiments in any of the other species; in the entire margins of the inner petals; and in the thicker root, approaching to tuberous.

Bot. Mag. 2350 (1822).

AMMOBIUM ALATUM.

SYNGENESIA POLYGAMIA ÆQUALIS.

Sect. DISCOIDEI.

Receptaculum paleis distinctis. *Pappus*, margo dentatus. *Antheræ* basi bisetæ. *Involucrum* imbricatum, coloratum, radians.—Herba *erecta, tomentosa.* Folia *integerrima:* radicalia *lanceolata, basi attenuata,* caulina *minora, decurrentia.* Caulis *alatus, ramis unifloris.* Involucra *hemisphærica, laminis albis, intimis patulis radium abbreviatum*

efformantibus. Corollulæ *uniformes, flavæ.* Stigmata *truncato-dilatata.* Semina *ancipitia.* Receptaculum *convexum.* Brown.

Ammobium alatum, Brown MSS.

An undescribed genus belonging to the same tribe with *Gnaphalium,* discovered by Robert Brown, Esq., in 1804, growing plentifully, near the shores of Port Hunter (or the Coal River), in New South Wales, and named by him from its growing in sand.

Bot. Mag. 2459 (1824).

ENTELÆA ARBORESCENS.

POLYANDRIA MONOGYNIA.

Cal. 4—5-phyllus. *Petala* 4. *Stamina* indefinita, uniformia, *antheris* subrotundis, incumbentibus. *Stigma* denticulatum. *Capsula* sphæroidea, echinata, sex locularis, semi-sexvalvis, polysperma.—Arbor (*parva, ligno lævissimo spongioso,* SOLANDER) *pube stellari* (*in pagina superiore folii adulti parciore et subsimplici*) *tomentosa.* Folia *cordata, angulata, duplicato-crenata,* 5-*nervia,* stipulis *persistentibus, parvis, foliaceis.* Umbellæ *simplices, terminales, pedunculatæ,* involucro *polyphyllo, brevi,* pedicellis *ebracteatis.*

Flores *albi, raro* 5-*fidi ;* calyce *deciduo, foliolis aristatis,* gemma (alabastro) *quadricorni ;* petalis *flaccidis, apice sublaceris,* staminibus *corolla brevioribus, subtorulosis, omnibus antheriferis ;* stylo *angulato,* stigmate *umbilicato, margine denticulato.* Capsularum setæ *longæ, rigidæ, opacæ, pubescentes, spinula pellucida acuta recta terminatæ.* Semina *in singulo loculo biseriata, parva, obovata;* albumine *carnoso, semini conformi ;* embryone *recto, albo, longitudine fere albuminis ;* cotyledonibus *planis, cordatis.*

ORD. NAT. Inter *Tiliaceas,* proximum genus *Sparmanniæ,* quacum habitu, inflorescentia, antheris, stigmate, capsula-

rum figura, earumque setis spinula pellucida terminatis convenit; diversum filamentis omnibus antheriferis (unde nomen) vix manifeste torulosis, capsulis basi indivisis nec longitudinaliter dehiscentibus, loculis polyspermis, nec oligospermis (secundum Thunberg in *Sparmannia* dispermis, cujus tamen ovarii loculi certe polyspermi sunt) calycis foliolis aristatis nec muticis. *R. Brown MSS.*

Entelæa arborescens, *R. Brown MSS.*

Bot. Mag. 2480 (1824).

Stylidium adnatum, foliis cuneato linearibus, spica subcomposita; partialibus paucifloris, labello inappendiculato, capsulis angusto-linearibus: loculo postico angustissimo vacuo adhærente. *R. Brown MSS.*

Stylidium adnatum, *Br. Prodr. Fl. Nov.-Holl.*, p. 572.

β *spica pedunculata, caulibus partialibus indivisis,* Br.

"It is possible that the plant here figured," Mr. Brown observes, "may belong to a species different from *S. adnatum,* whose spike is generally sessile, and more subdivided; I am inclined, however, to unite them, and to add, as a third variety, *S. propinquum,* which was taken up from imperfect materials. In the section of the genus to which *S. adnatum* belongs, the best specific differences are found in modifications of the structure of the capsule, and by these alone the species at present known may be readily determined. Thus, in *S. breviscapum* the cells and valves of the capsule are in form and contents perfectly equal, as in the other sections of the genus. In *fasciculatum* the cells are dissimilar in form, but of nearly equal size, and both fertile. In *falcatum* the posterior cell, still more different in form, is also considerably reduced in width and entirely without ovula; nor is it, as I have stated in the specific character, fertile. Lastly, in *adnatum,* of which I am now disposed to consider *propinquum* a variety, the posterior cell is not only entirely destitute of ovula, but is reduced to a capillary tube, which continues to adhere to the fertile cell. From this series of species, in which the upper or posterior cell is gradually obliterated, we are led to the true explanation of the structure of *Lysipoma*. This genus, belonging to *Lobeliaceæ*, is described by M. Kunth as having a single parietal placenta; it may, however, be regarded as having a septum so closely pressed to the upper side of the capsule as to have no manifest cavity, and consequently produces ovula on the one side only." *Brown MSS.*

Bot. Mag. 2598 (1825).

Bæckia camphorata, Brown MSS.

Bot. Mag. 2694 (1826).

CONTRIBUTIONS

TO THE

BOTANICAL REGISTER.

[illegible]

1816—1826.

CONTRIBUTIONS

TO THE

BOTANICAL REGISTER.

CRYPTARRHENA. Petala 5, distincta, patentia. *Labellum* ecalcaratum : *lamina* dilatata explanata. *Columna* libera, aptera. *Anthera* apice cucullato columnæ inclusa, porrecto-ascendens. *Massæ pollinis* quatuor. *Brown MSS.*

Cryptarrhena *lunata,* Brown MSS.

Bot. Reg. 153 (1816).

VESTIA.

On Mr. Brown's suggestion, we have placed the genus in the Order *Solaneæ.* It comes very close to *Lycium.*

Bot. Reg. 299 (1818.)

Callistemon rigidum, foliis linearibus (lanceolato-linearibusve) planis acutissimis mucronatis lævibus, ovariis pubescentibus, capsulis distinctis. *Brown MSS.*

Bot. Reg. 393 (1819).

CALYTRIX. *Cal.* superus, tubo cylindraceo, limbo 5-partito, laciniis aristatis persistentibus. *Pet.* 5, decidua. *Stam.* omnia (sæpius indefinita rarò decem) antherifera, decidua. *Ovarium* uniloculare, dispermum. *Pericarpium* (*Achenopsis*) monospermum, indehiscens, exsuccum. Frutices (*Novæ Hollandiæ*) *ericoidei.* Folia *parva, sæpiùs angulata, sparsa, imbricata, glanduloso-punctata, in plerisque petiolata et stipulis ! setaceis liberis minutis deciduis instructa.* Flores

(*albi vix purpurei*) *axillares, solitarii, bibracteali,* bracteis *membranaceis, carinatis, persistentibus, basi connatis.* Brown MSS.

C. glabra, icosandra; foliis petiolatis stipulatis adultis bracteisque glabris. *Brown MSS.*

The generic character now offered is from the pen of Mr. Brown, and has been framed with the accustomed skill and foresight of that learned naturalist with a view to the cluster of confining genera from the same regions, which will be found near it in the concluding volume of his 'Prodromus of the Flora of New Holland.' Achenium implying an indehiscent originally one-seeded seed-vessel, while that of the present genus, though eventually one-seeded, having been found by Mr. Brown to originate in a germen with two ovula, one of which proves constantly abortive, he has thought it advisable to suggest *Achenopsis* as a more precise denomination for this sort of seed-vessel.

Glabra is the first of the genus that has presented itself in our European gardens, and is native within the colony of Port Jackson, where it was found by Mr. Brown, whose herbarium contains likewise four more of its congeners, of which that gentleman has favoured us with the following account:—Three, our plant being one, were observed by him in the colony above mentioned, as well as in Van Diemen's Island, and agree in having a petioled stipuled foliage and icosandrous flowers; a fourth he discovered on the south-west coast of New Holland, this had likewise a petioled stipuled foliage, but the flowers were decandrous; the fifth he observed on the north coast of the same continent (in the Bay of Carpentaria), in that the flowers were icosandrous as in the three first-mentioned species, but it differed from all the others in having a foliage without either petioles or stipules. Through these modifications the genus will be found to unite with its confining co-ordinates at different points. *Bot. Reg.* 393 (1819).

Melaleuca incana, foliis ternis lineari-lanceolatis utrinque ramulisque incano-pubescentibus, spicis ovalibus oblongisve. *Brown MSS.* *Bot. Reg.* 410 (1819).

ARTABOTRYS. *Cal.* tripartitus. *Petala* sex. *Stamina* hypogyna. *Ovaria* distincta, disperma. *Baccæ* dispermæ (abortione quandoque monospermæ). *Semina* collateralia erecta exarillata albumine rimoso.—Frutices *decumbentes.* Folia *alterna, integerrima, exstipulata.* Pedunculi *extra-alares, subopposittifolii pauciflori,* pedicellis (1—2) *lateralibus, apice uncinati.* Brown MSS.

OBS. *Characteribus suprà datis proximè accedit* Kadsuræ, *cujus baccæ dispermæ seminibus collateralibus pariter distinctæ receptaculo carnoso insidentes fide iconis et descriptionis Kæmpferi* (Amæn. Exot. 476); *sed* Kadsura *vix* Annonacea ob summam affinitatem cum Uvariâ heteroclitâ, Roxb. Flor. Ind. Ined. *cui albumen indivisum nec processubus membranæ interioris rimosum auctoritate descriptionis operis citati.* Brown MSS.

A. odoratissimus, petalorum laminis planis lanceolatis, foliis oblongis acuminatis. *Brown MSS.*

Uvaria odoratissima. *Roxburgh, Flor. Ind. Ined.*

Unona uncinata, *Dunal Anonacées,* 105, t. 12 et 12a, *DeCand. Syst. Nat.* 1, 490.

Unona hamata. *Dunal Anonacées,* 107. *DeCand. Syst. Nat.* 1, 491.

Uvaria esculenta. *Rottler in Nov. Act. Soc. Nat. Cur. berol.* 4, 201.

Uvaria uncata. *Loureiro cochin.* 349.

Anona uncinata. *Lamarck. encyc.* 2, 127.

Anona hexapetala. *Linn. Suppl.* 270. *Hort. Kew.* 2, 253. *Ed.* 2, 3, 335. *Willd. sp. pl.* 2, 1266.

The present plant, after various shiftings from one inappropriate group to another, according to the wavering views of different botanists, is now placed in a new genus constituted for its reception by Mr. Brown, to whom the generic name has been suggested by the curious grapple or tendril belonging to the peduncle, by which the growing fruit is conveniently suspended on the nearest support, during its advance to maturity, and the slender flexile branch relieved from the disproportionate burden, which would be otherwise laid on the ground.

The synonymy is also a valuable contribution from

Mr. Brown, and presents a critical view of the scientific history of the species.

We understand that three species of ARTABOTRYS, besides the present, are already known, one of which with curiously small flowers has been recently discovered by Dr. Horsfield during his residence in Java, and is in the rich Herbarium that gentleman has brought to this country.

Bot. Reg. 423 (1820).

MODECCA. *Flores* diclines (dioici v. monoici). *Cal.* 5-fidus. *Petala* 5, calyci inserta. *Squamæ* (*Nectarium*, Linn.), numero definitæ (5—10) rarònullæ. MAS. *Stamina* 5; *antheræ* stantes. FEM. *Caps.* (pedicellata) unilocularis 3-valvis polysperma. Herbæ (*Indiæ Orientalis, Novæ Hollandiæ, et Africæ Æquinoctialis*) *scandentes cirrhis axillaribus simplicibus vel e divisuris pedunculorum.* Folia *lobata v. indivisa basi et subtùs sæpiùs glandulosa.* Pedunculi *axillares apice divisi dichotomiis cirrhiferis.* Brown MSS.

Bot. Reg. 433 (1820).

CRYPTOSTEGIA. *Cor.* infundibuliformis: *tubus* squamis 5, inclusis (bipartitis *subulatis*) laciniis limbi alternantibus. *Stamina* inclusa, imo tubo inserta; *filamentis* distinctis; *antheris* basi stigmate cohærentibus. *Glandulæ* 5, spathulatæ, angulorum stigmatis pollen granulosum (simplex) colligentes. *Ovaria* 2. *Styli* 2. *Stigma* (commune) pentagonum. *Folliculi* *Semina* comosa.—Frutex *volubilis, glaber.* Folia *opposita.* Pedunculi *terminales, 3-fidi.* Flores *speciosi.* Corolla *æstivatione contorta.* Folliculi *ungulati, divaricatissimi.* Brown MSS.

Cryptostegia grandiflora. *Brown MSS.*

CRYPTOSTEGIA is founded upon a single species, native of the Peninsula of India, where it was first observed by Dr. Roxburgh, and strangely mismatched by him with the species of the genus *Nerium*, belonging to the *Apocyneæ*; while our plant belongs to the third section of Mr. Brown's *Asclepiadeæ*, distinguished from the other sections by granular solitary pollen-masses and filaments which are distinct in whole or in part. *Cryptostegia* is, however, conceived by Mr. Brown to be the link by which the two orders connect through his genus *Cryptolepis,* also a native of India and a climber.

The name was suggested to Mr. Brown by the circumstance of the enclosure of the five-scaled crown within the tube of the corolla, and its not being exposed to view, as in other bordering genera.

Bot. Reg. 435 (1820).

BURCHELLIA. *Capitulum* involucratum. *Cor.* clavato-infundibuliformis: *limbo* 5-fido abbreviato fauceque imberbi; æstivatione mutuò imbricatâ contortâ. *Stamina* supra medium tubi inserta; *antheris* subsessilibus inclusis. *Stigma* clavatum. *Bacca* calyce altè 5-fido coronata, bilocularis, polysperma. *Brown MSS.*

Frutex *ramosissimus pubescens,* ramulis *compressis.* Folia *opposita.* Stipulæ *interpetiolares, e dilatatâ basi subulatæ, indivisæ, caducæ.* Capitulum *terminale, extra involucrum monophyllum pluridentatum abbreviatum, pari unico foliorum minorum stipulis proportionatim latioribus subtensum.* Ovaria *supra* receptaculum *convexum villosum* bracteolisque *nonnullis minutissimis conspersum sessilia, distincta.* Calyx: *limbo foliaceo æquali, tubum aliquoties superante.* Corolla *coccinea, extùs pilis appressis, intùs glabra præter barbam annularem juxta basim tubi.* Antheræ *lineares.* Discus *epigynus carnosus, indivisus, imberbis.* Stigma *exsertum, utrinque sulco exaratum.* Bacca *turbinato-globosa, bilocularis septo completo.* Placenta *adnata.* Semina *angulata.* Embryo *axilis, dimidio albuminis cartilaginei longior.* Brown MSS.

Burchellia capensis. *Brown MSS.*

By its original observer the species had been ranked under the head of *Lonicera,* but was afterwards referred to its true station in *Rubiaceæ;* though that learned botanist, in adopting an erroneous description, representing the seeds of the berry as solitary, has placed the plant in a wrong section of the order. Mr. Brown having proved it not to be consistently reducible to any established genus, has formed a new one from it, and with that liberality and vigilance which he extends to every interest of science, availed himself of the appropriate occasion of honouring the merits of Mr. Burchell, the zealous and enterprising investigator of the regions to which our plant belongs.

Bot. Reg. 466 (1820).

CALOTIS. *Recept.* epaleaceum. *Achenia* coronata paleis duabus oppositis aristisque 1-3 glochidatis. *Involucrum* subæquale, simplici vel duplici serie polyphyllum. *Brown MSS.*

Herbæ *ramosæ, pilosiusculæ.* Folia *alterne.* Involucra *ramos terminantia, solitaria, planiuscula, foliacea.* Ligulæ *fœmineæ numerosæ, imbricatæ, cœruleæ, post anthesin spiraliter revolutæ, et diù persistentes. Flosculi* masculi *quinquefidi, flavi,* antheris *basi muticis.* Achænia (semina, *Linn.*) *verticaliter compressa cuneata.* Pappus *persistens, e* paleis *lateralibus,* dilatatis *latioribus quam longis, auriculiformibus; et* aristis *longioribus sæpiùs duâbus* (*anticâ et posticâ*), *extra medium vel apice solùm aculeolis reversis.* Receptaculum *scrobiculatum vel subalveolatum convexum.* Brown MSS.

Calotis cuneifolia, foliis cuneatis apice inciso-dentatis. *Brown MSS.*

The character of *Calotis* was formed, but not published about fifteen years ago, from *C. dentex,* a species first observed by Mr. Brown himself in New Holland, where it is not uncommon in the neighbourhood of Port Jackson. The present has been since found, during an expedition into the interior of the above country, growing on the banks of the River Lachlan in 1817, by Mr. Allan Cunningham, who is commended by Mr. Brown as "an indefatigable collector and acute observer."

Bot. Reg. 504 (1820).

VANDA. *Labellum* calcaratum, cum basi simplici (breviusve productâ) *columnæ* apteræ continuum, trifidum, lobo medio carnoso. *Petala* patentia distincta. *Massæ pollinis* 2, obliquè bilobæ. *Brown MSS.*

Obs. Aerides paniculatum (*Bot. Reg. v.* 3, *f.* 220) *generis pristini species impar nimis huic* (*monente D. Brown*) *aptè satis associari potest. Parasiticæ ambæ.*

Vanda *Roxburghii*, ovariis contortis, petalis oblongo-ovatis undatis, foliis obliquè tridentatis. *Brown MSS.*

The generic character now given has been formed by Mr. Brown so as to include Aerides *paniculatum*, published provisionally by that generic name in our third volume (fol. 220); but now it will be seen that the species is not a very close congener of the one before us. The Cymbideum *tessellatum* of Roxburgh is not included in the present genus.

Mr. Brown had some scruple in not ranging the group under Angræcum of M. Du Petit-Thouars (of which a species is given in 'Voy. de Bory de St. Vincent,' 1359, tab. 19), not being able, from want of sufficient detail in the description of the structure of the parts of that genus, to decide satisfactorily whether he ought to do so or not; and has at last been determined principally by the *label* in Angræcum being undivided, and probably membranous, while in Vanda it is three-lobed and fleshy. He expects that several species of Swartz's genus Limodorum will be found to rank under the present.

Bot. Reg. 506 (1820).

Griffinia *parviflora*.

Semina *secundum observationes Dom.* Brown, *obovata, ventricosa, nitentia, ochroleuca;* umbilicus *basilaris; apex* chalazâ fuscâ *insignitus;* raphe *tenuis, immersa;* integumentum *duplex,* exterius *membranaceum, nitens, per lentem pulchrè areolatum, ventre longitudinaliter incrassatum, præsertim in regione umbilici;* membrana propria *tenuissima, albumini adhærens, separabilis tamen, evasculosa, basi chalazæ inserta cæterùm libera;* albumen *semini conforme, densè carnosum;* embryo *axilis, longitudine dimidii albuminis, cylindraceus;* radicula *umbilico approximata, apice exserto.* Brown MSS.

We are to thank Mr. Brown for the description of the seed of this genus, the nature of which had been misunderstood until the present subject was submitted to the test of his accurate and skillful investigation.

Bot. Reg. 511 (1821).

Hedychium elatum, foliis oblongo-lanceolatis glabris, spicis laxis; fasciculis ternis subtrifloris, laciniis interioribns limbi cuneato-linearibus, labelli laminâ bifidâ. *Brown MSS.*

Caulis 8—10-*pedalis.* Folia *inferiora oblongo-lanceolata,* omnia *acumine subulato-filiformi citiùs marcescenti.* Spica 6-*uncialis,* fasciculis *distinctis sæpissimè ternis, patentibus, trifloris.* Ovarium (germen) *villosum.* Perianthium exterius (calyx) *spathaceum, scariosum, pubescens:* interius (corolla) *tubo cylindraceo ochroleuco, limbo exteriore tripartito laciniis angusto-linearibus acutis, interiore laciniis lateralibus cuneato-linearibus, apice parùm dilatato obliquo:* labellum *ungue brevi lato-lineari: laminâ circumscriptione ovatâ, lobis dimidiato-ovatis obtusiusculis.* Filamentum *labello longius.* Antheræ *linearis basi bifidâ lobis polliniferis.* Stigma *cyathiforme indivisum ciliatum.* Nectaria (stamina sterilia) 2, *brevissima, teretiuscula, approximata.* Brown MSS.

An unrecorded species, determined and described by Mr. Brown from native samples in the Banksian Museum, of which that gentleman is now, fortunately for science, in the well-earned possession. The samples formed part of the collection of Nepaulese plants transmitted by Dr. Wallich, the able superintendent of the Calcutta Botanic Garden, by whom, as was plain from the inscribed notice, they had been taken for *speciosum,* accurately described by himself in the 'Flora Indica' of Roxburgh; but on examination by Mr. Brown, proved to be essentially distinct from that species.

Bot. Reg. 526 (1821).

Anthemis apiifolia, foliis glaberrimis pinnatifidis: lobis cuneatis trifidis incisisve, floribus solitariis, involucri foliolis linearibus apice scariosis. *Brown MSS.*

Involucrum (calyx) *hæmisphæricum, foliolis subæquali-*

bus, appressis, linearibus, apice brevi scarioso vix dilatato. Pappus: margo *membranaceus brevissimus indivisus.* Receptaculum *convexiusculum, paleaceum, paleis linearibus acutis.* Brown MSS.

With our present imperfect knowledge of this plant, it is perhaps necessary to refer it to ANTHEMIS, though in real affinity it will probably be found to approach more nearly to CHRYSANTHEMUM *Indicum,* of which the supposed double-flowered varieties are in like manner generally furnished with *paleæ.* As that plant, however, in its single state has always a naked receptacle, and some of its double-flowered varieties are constantly, while others are occasionally without *paleæ,* in the second edition of the 'Hortus Kewensis,' it was continued in CHRYSANTHEMUM; an arrangement which it would not perhaps be necessary to alter, were it even proved that two species have been confounded under the name of CHRYSANTHEMUM *Indicum,* both of them belonging decidedly to the same natural genus, and to this genus I am inclined to think ANTHEMIS *apiifolia,* when completely known, may be referred. As to the narrow *margo* crowning the seed, on account of which our plant has been considered a PYRETHRUM, it does not appear to me to constitute a sufficient generic character, and it equally exists in CHRYSANTHEMUM *Indicum,* particularly in the single-flowered specimen of the Linnean Herbarium. *Brown MSS.*

For the above account we are indebted to the unwearied liberality of Mr. Brown, who has taken this opportunity to account for his retaining CHRYSANTHEMUM *Indicum* in that genus in the second edition of the 'Hortus Kewensis,' and for not following some of his predecessors in referring the species to ANTHEMIS.

Bot. Reg. 527 (1821).

ASTELMA. *Receptaculum nudum* (*nec paleatum nec favosum*). *Pappus* plumosus, sessilis; radiis *basi connatis. Involucrum* (*calyx*) imbricatum, squamis scariosis: intimis conniventibus. *Brown MSS.*

Astelma eximium, Brown MSS.

Astelma is now first detached from Gnaphalium by the above able hand; and founded upon the present species characterised as a genus by a naked *receptacle of the flower*. (neither chaffy nor honeycombed); a sessile feathered *seed-crown*, the radii of which are connected at the base; an imbricated *calyx* composed of scariose *leaflets*, the innermost of which are convergent, and whose florets are all both stamen-bearing and pistil-bearing. It is the nearest genus to Elichrysum, from the genuine species of which, according to Mr. Brown, it only differs by the rayless calyx.

Bot. Reg. 532 (1821).

Dendrobium cucullatum, caulibus pendulis, foliis bifariis lanceolatis acuminatis, pedunculis oppositifoliis subbifloris, labello indiviso circumscriptione ovato basi cucullato. *Brown MSS.*

It is said to be in several collections, and to have been generally conceived to be Dendrobium *Pierardi* of the unedited part of Roxburgh's 'Flora Indica'; and which, according to Mr. Brown, to whom, as in so many instances, we are indebted for all we have to say on the subject, it is possible it may really be; but finding by both figure and description the flowering stems of that species represented as leafless, the lamina of the labellum of an obovate form, and leaves as emarginate, while in the present plant the flowering stems are in full leaf, its labellum of an ovate outline, and the leaves taper-pointed, he has deemed it safer to regard the present sample as belonging to a distinct species.

Bot. Reg. 548 (1821).

Lissochilus. *Massæ pollinis* 2, obliquè bilobæ. *Labellum* basi saccatum: laminâ sessili indivisâ convexâ, posticè excisâ et cum basi columnæ apteræ edentulæ connatâ. *Brown MSS.*

L. speciosus, petalis interioribus divaricatis duplò majoribus exterioribus reflexis, labello altè cordato. *Brown MSS.*

Herba 4-*pedalis et ultrà.* Folia *radicalia ensiformia*

acutissima crassiuscula rigidula viridia nec glauca, marginibus carináque lævibus: basibus dilatatis incrassatis in bulbum emersum connatis, scapo aliquoties breviora. Scapus *vaginatus teres viridis solidus, fasciculis vasorum sparsis.* Vaginæ *distantes strictæ foliaceæ, in foliola lanceolata, appressa, acuta longitudine vix ipsius vaginæ productæ.* Spica *racemosa simplicissima erecta laxa sesquipedalis.* Bracteæ *foliaceæ lanceolatæ, patulæ sæpiùsve divaricatæ, immersè nervosæ, marginibus lævibus, infimæ in scapum paulò decurrentes ovarium cum pedicello suo superantes, reliquæ sessiles, superiores ovario breviores.* Flores *speciosi, e torsione pedicelli baseosque ovarii verè resupinati, labello antico.* Perianthii foliola 3 exteriora *utrinque viridia calycina, distincta arctè reflexa ovata acutiuscula immersè nervosa, postico plano, lateralia paulò latiora lavissimè concava;* interiorum *lateralia petaloidea, flava, immaculata, divaricatissima, oblongo-ovata, obtusiuscula, limbo parùm reflexo, disco hinc convexiusculo; nervosa nervis lateralibus alternatim simplicibus bifidisque, ipsa basi alba.* Labellum *lateralibus interiorum vix brevius, basi subtùs calcarato-saccatum cornu brevissimo compresso albo:* lamina *sessilis, circumscriptione ovato-oblonga, flava basi albicante venis purpureis, apice subretuso, basi altè cordata lobis posticis rotundatis dimidio inferiore liberis superiore cum basi columnæ cohærentibus suturis manifestis, lateribus subparallelo-reflexis plicatis plicis paulò tantùm elevatis obtusis sulcis intersticialibus angustis: disco convexo axi gibbosiusculo.* Columna PROPORTIONATA *semiteres e basi albá pallidè virens, aptera apice edentulo posticè rotundato.* Anthera *terminalis mobilis decidua, in expanso flore apicem anticè declivem columnæ operiens, didyma, dorso incrassato dilutè viridi apice retuso, bilocularis loculis approximatis septulo partiali incompleto contrario in latere exteriore instructis.* Massæ pollinis *in singulo loculo singulæ, in gemmá florali juniori minutissimè granulosæ, in expanso flore cereaceæ ovatæ, post imprægnationem in apice obliquo columnæ (clinandrio) inversæ, posticè (respectu antheræ anticè) instructæ lobulo minore operiente majoris cavitatem illitam materia viscidá elasticá flavescenti processus cujus*

massæ insertæ lingulæ communi brevi lato-lineari membranaceæ albæ e glandulâ subrotundâ apicis stigmatis ortæ. Stigma *anticum cavum subrotundum viride secernens.* Brown MSS.

The plant here described is the only certain species of Lissochilus; *Cymbidium giganteum,* however, according to Thunberg's description, may also belong to the same genus. This genus, in affinity, comes nearest to those plants of South Africa at present referred to *Limodorum* and *Cymbidium,* namely, *Limodorum barbatum, triste, longicorne,* and perhaps also *hians* of Thunberg (not, however, Satyrium hians, *Linn,* which seems to be a *Disa*), *Cymbidium pedicellatum* and *aculeatum.* These, along with several Indian species, also referred by Swartz and Willdenow to *Limodorum,* especially *L. virens, carinatum* and perhaps *epidendroides,* form a genus (EULOPHUS) related on the one hand to *Dipodium* (vide *Prodr. Flor. Nov. Holl.,* p. 300), and essentially agreeing with *Lissochilus* in the structure of Anthera, but sufficiently different from it in its trilobed crested labellum, which is neither cordate nor connected at base with the column. In both these characters *Lissochilus* equally differs from *Angræcum* of M. Du Petit-Thouars, which has also an elongated spur, and a considerably different habit.

Among the plants at present referred to *Limodorum,* another very distinct genus may be noticed, consisting of *Limodorum veratrifolium,* and judging from Kæmpfer's figure, *L. striatum* also. This genus (CALANTHE) agrees with *Bletia* in having eight pollen-masses, but differs from it in the claw of the labellum being connected with the column. It is not unlikely that this may be the *Cyanorchis* of M. Du Petit-Thouars, who will probably hereafter publish it under a different name. *Brown MSS.*

Bot. Reg. 573 [578 *by mistake in orig.*] (1821).

OPHIOPOGON *spicatus.*

Liriope spicata, *Loureiro cochin.* 200 (*monente D. Brown ab autopsiâ edocto exemplaris archetypi in Herb. Parisiano asservati*).

In O. spicato (*monente D. Brown*) semen (sæpè 2—3), *nudum baccatum de* ovulo *mox post factum conceptum auctu præcociori cætera illidente exque germinis vertice erumpente excretum: basi cum exuto germine cohærens.*

In *O. spicatus,* Mr. Brown has found the fruit to be of the same kind he has ascribed to PELIOSANTHES *Teta,* in the twelfth volume of the 'Linnean Transactions' [*vol.* 1, *p.* 362].

Bot. Reg. 593 (1822).

MACRADENIA. *Labellum* sessile, cucullato-concavum indivisum acuminatum. *Corollæ* petala distincta patula. *Columna* libera, lobis apicis conniventibus. *Massæ pollinis* 2, exsulcæ. *Brown MSS.*

Macradenia lutescens, Brown MSS. Cor. *sordidè lutea, intùs purpureo-fusco marmorata.* Labellum *corollâ brevius, ecalcaratum, album, intùs purpureo interruptè lineatum, obovatum, appendice lineari acutâ reflexâ.* Columna *longitudine ferè labelli, semiteres, suprà sensim latior lobis lateralibus apicis in cucullum antheram amplexantem conniventibus.* Anthera *e basi paulò gibbosiore intùsque biloculare producta in acumen lato-lineare concavum ipsâ basi aliquoties longius processum subulatum stigmatis, glandulam, ejusque appendicem, involvens.* Massæ pollinis *cuneiformes, modicè compressæ, post migrationem apicibus suis acutis affixæ disco apicis dilatati appendicis elongatæ proscollæ.* Brown MSS.

An undescribed species, now first introduced by Mr. Griffin, who received the plant, represented in the annexed plate, from Trinidad. It flowered last December in the hothouse at South Lambeth, and was communicated to Mr. Brown, who has made it the foundation of the present genus, to be placed next to Oncidium, from which it differs by a convolutely concave undivided taper-pointed *label*, a *corolla* with the *petals* all distinct, a *column* with the two top-lobes converging convolutely (not extended), and by two furrowless or unindented *pollen-masses* (furrowed or indented in Oncidium).

Bot. Reg. 612 (1822).

Ceropegia. Asclepiadea. *Cor.* tubulosa basi ventricosa, limbi laciniis ligularibus conniventibus: æstivatione valvata. *Columna fructificationis* inclusa. *Corona staminea* 10-fida; laciniæ 5 antheris distinctis oppositæ longiores cum 5 reliquis (indivisis bifidisve) alternantes. *Massæ pollinis* erectæ. Herbæ *glabræ, sæpiùs volubiles, radice tuberosâ.* Umbellæ *interpetiolares, nunc paucifloræ.* Brown MSS.

C. africana, pedunculis 2—3-floris, foliis ovato-lanceolatis carnosis, limbo corollæ barbato, coronæ laciniis longioribus aversis falcato-recurvis: brevioribus indivisis. *Brown MSS.*

Radix: tuber *pro ratione herbæ* 3—6-*uncialis magnum.* Caulis *simplex, sæpiùs volubilis.* Folia *acuta, planiuscula, avenia, brevè petiolata, divaricata, apicibus subrecurvis, semuncialia.* Spica *rara e pedunculis alternis brevibus* 2—3-*floris, pedicellis brevibus minutè bracteolatis.* Flores *erecti, inferiore præcociore.* Cal. 5-*partitus, laciniis lineari-subulatis modicè patentibus, basi ventricosâ tubi corollæ ferè ter brevioribus.* Corolla: *tubus e basi obovato-globosâ obsoletè pentagonâ viridi cylindraceus, fauce infundibuliformi striatâ; limbi laciniæ lineares intùs marginibusque pilis coloratis patulis acutis barbatæ, erectæ apicibus conniventibus læviterque cohærentibus: limbus inexpansus prismatico-pentagonus fauce pentagonâ angulis extantibus cum laciniis limbi alternantibus.* Columna fructificationis *basi ventricosâ tubi inclusa.* Corona *apici tubi staminei brevis inserta monophylla decemloba: lobi quinque cum staminibus alternantes abbreviati indivisi obtusi basi saccati: quinque reliqui quasi interiores antheris oppositi aliquoties longiores margine interiori truncato-canaliculato exteriori in aciem*

attenuato. Antheræ *distinctæ ovatæ* loculis *lateralibus longitudinaliter dehiscentibus appendice apicis carnosâ brevi acutâ stigmate incumbente.* Massæ pollinis *minutæ supra basin affixæ subglobosæ.* Stigma *muticum.* Brown MSS.

A very curious unrecorded species, now first introduced from the Cape of Good Hope. The masterly description is by Mr. Brown, who has so far modified the character of the genus with respect to that defined by himself in his illustration of the Natural Order, in the 'Memoirs of the Wernerian Natural History Society,'[1] as to fit it for the reception of the species before us; which he considers too naturally allied to the East Indian group he had originally allotted to CEROPEGIA to be separated.

Bot. Reg. 626 (1822).

SCHIZOPETALON. *Calyx* clausus. *Petala* pinnatifida! *Siliqua* torosa, seminibus uniseriatis. *Cotyledones* quatuor! separatim contortuplicatæ! Herba *annua alternifolia, pube tenui-ramosa.* Folia *sinuato-pinnatifida.* Racemus *foliaceo-bracteatus.*

Calyx *pubescens, foliolis albo-marginatis, lateralibus altiùs descendentibus.* Petala *alba, unguibus calycem paulò superantibus, laminis circumscriptione ovatis, pinnatifidis,* laciniis *linearibus siccitate* (*et forsan æstivatione*) *involutis.* Stamina 6, *filamentis subæqualibus, edentulis, antheris uniformibus, sagittato-linearibus, introrsis.* Glandulæ *hypogynæ quatuor lineares, erectæ, petalis suboppositæ, geminatim basibus dilatatis confluentibus filamenta lateralia stipantes.* Stylus *brevissimus.* Stigmata *papulosa, connato-approximata, in stylum decurrentia, basibus solutis, unicum quasi extinctoriiforme efformantibus.* Siliqua *sessilis, bilocularis, angusto-linearis, pube ramosâ brevi conspersa, valvis venosis.* Semina *sphærico-lenticularia.* Embryo *viridis* Radicula *albicans, arcuata, semine paulò longior.* Cotyledones *verticillatæ, æquales, elongatæ, angustatæ, semiteretes, separatim subspiraliter involutæ.*

In ordine *Cruciferarum* genus nulli cognito affine, et equidem ob numerum, figuram et vernationem cotyledonum, petala pinnatifida, stigmatis structuram et stamina subæqualia tribus distinctæ initium efformare videtur. *Brown MSS.*

---

[1] [See *antè*, *p.* 205.]

For the elaborate character which we have given above, we are entirely indebted to Mr. Brown, who alone, in this country, was capable of defining the limits, and of fully appreciating the peculiarities of this truly singular plant.

Bot. Reg. 752 (1823).

CARMICHAELIA. *Calyx* cyathiformis 5-dentatus. *Ovarium* polyspermum. *Legumen* oligospermum (1—3-sp.), *replo* post lapsum valvularum persistente!

Frutex *ramosissimus, sub statu florescentiæ sæpius aphyllus.* Caulis ramique primarii *teretes, teneriores v. plano-compressi, v. ancipites,* stipulis *minutis alternatim dentati.* Folia *e dentibus ramorum fruticis junioris, ternata v. pinnata* (*foliolis* 3—7 *obcordatis*). Racemi *simplicissimi e denticulis ramorum: pedicelli basi bractea abbreviata, apice binis minutissimis.* Flores *parvi.* Calycis *dentes subæquales, brevissimi.* Petala *longitudine subæqualia.* Vexillum *lamina latiore quam longiore, basi absque callis auriculisve.* Carina *obtusa.* Filamenta 1—9-*fid.* Antheræ *uniformes, subovales.* Ovarium *lineare,* 5—6-*spermum.* Stylus *subulatus, adscendens.* Stigma *obtusum, imberbe.* Semina *subreniformia, sinu clauso umbilico nudo.* Brown MSS.

C. australis, *Brown MSS.*

Lotus arboreus, Forst. Prodr., No. 2, 278.

For the above character of this very remarkable genus we are indebted to the kindness of Mr. Brown, who, fortunately for science, is in possession of perfectly ripe fruit. The term *replum,* which is employed in Mr. Brown's generic character to designate the persistent circumscription of the legume, was used by Vitruvius for the frame of a door, and we believe has been already applied to the purposes of botanical description in the sense in which it is used here, which is certainly unexceptionable.

The garden plant has been compared by Mr. Brown with the specimens from Cook's 'Voyage,' in his own collection, and with an authentic specimen from George Forster's 'Herbarium,' as well as by ourselves, with others from some part of New Zealand; and no difference has been detected between them.

In explanation of the name applied to this plant, we make the following extract from Mr. Brown's communication upon the subject:

"I have named the genus in honour of my friend, Captain Dugald Carmichael, F.L.S., a very accurate botanist, whose interesting account of the Island of Tristan d'Acunha is published in the 12th volume of the 'Linnean Society's Transactions,' and to whom I am indebted for extensive collections, and many excellent descriptions of the plants of the Island of Mauritius and of the Cape of Good Hope."

Bot. Reg. 912 (1825).

Chorizema Henchmanni, foliis acicularibus pungentibus solitariis v. ternatim fasciculatis, calycibus villosis.

C. Henchmanni, *R. Brown, ined.*

This plant, which recedes very much in habit from the species of *Chorizema*, previously published, has been named by Mr. Brown in honour of Francis Henchman, Esq., a very successful importer of New Holland plants, for whom the present subject was collected by Mr. William Baxter.

Bot. Reg. 986 (1826).

NAMES, &c., OF PLANTS

CONTRIBUTED TO

VARIOUS PUBLICATIONS BETWEEN
1818 AND 1826;

AND

NAMES QUOTED

FROM

R. BROWN'S "HERBARIUM"

IN

MR. BENTHAM'S 'FLORA AUSTRALIENSIS,'
VOLS. I—III, 1863—6.

NAMES, &c., OF PLANTS

CONTRIBUTED TO

VARIOUS PUBLICATIONS BETWEEN 1818 AND 1826.

I. Names and Descriptions of Plants contributed to De Candolle's 'Systema Naturale Regni Vegetabilis,' Paris, 1818—1821.

RANUNCULACEÆ.

Clematis stenopetala, R. Brown, *vol.* 1, *p.* 147.
— *aristata*, R. Brown, *ibid.*
Ranunculus inundatus, R. Brown, 1, *p.* 269.
— *collinus*, R. Brown, 1, *p.* 271.
— *Pumilio*, R. Brown, *ibid.*
— *plebeius*, R. Brown, 1, *p.* 288.
— *sessiliflorus*, R. Brown, 1, *p.* 302.

DILLENIACEÆ.

PACHYNEMA, R. Brown, 1, *p.* 411.
— *complanatum*, R. Brown, 1, *pp.* 411, 412.
Hemistemma dealbatum, R. Brown, 1, *p.* 413.
— *Banksii*, R. Brown, 1, *p.* 414.
— *angustifolium*, R. Brown, *ibid.*
Pleurandra bracteata, R. Brown, 1, *p.* 415.
— *nitida*, R. Brown, 1, *p.* 416.
— *sericea*, R. Brown, *ibid.*
— *cinerea*, R. Brown, 1, *p.* 417.
— *furfuracea*, R. Brown, *ibid.*
— *parviflora*, R. Brown, 1, *p.* 418.

Pleurandra scabra, R. Brown, 1, *p*. 418.
— *riparia*, R. Brown, 1, *p*. 419.
— *pedunculata*, R. Brown, *ibid.*
— *acerosa*, R. Brown, 1, *p*. 422.
— *stricta*, R. Brown, *ibid.*
Candollea pedunculata, R. Brown, 1, *p*. 424.
— *fasciculata*, R. Brown, *ibid.*
Hibbertia dentata, R. Brown, 1, *p*. 426.
— *saligna*, R. Brown, 1, *p*. 427.
— *virgata*, R. Brown, 1, *p*. 428.
— *fasciculata*, R. Brown, *ibid.*
— *linearis*, R. Brown, *ibid.*
— *diffusa*, R. Brown, 1, *p*. 429.
— *monogyna*, R. Brown, *ibid.*
— *pedunculata*, R. Brown, 1, *p*. 430.
— *serpyllifolia*, R. Brown, *ibid.*
— *oblongata*, R. Brown, 1, 431.
— *cistifolia*, R. Brown, *ibid.*
— *tomentosa*, R. Brown, 1, *p*. 432.
— *lepidota*, R. Brown, *ibid.*
Wormia alata, R. Brown, 1, *p*. 434.

MAGNOLIACEÆ.

TASMANNIA, R. Brown, 1, *p*. 445.
Tasmannia aromatica, R. Brown, *ibid.*
— *insipida*, R. Brown, *ibid.*

Hujus generis caracter sic a cl. Brown observatus fuit, nempe:

Flores diici vel polygami. Calyx 2-sepalus. Petala 2—5. ♂ Stamina ∞, cum vel absque rudimento pistilli. ♀ vel ☿ Ovarium 1, 1-loculare; stigma latere interiore ovarii longitudinaliter adnatum! Bacca polysperma. (Brown, in litt.)

OBS. Cl. Brown autumat Tasmanniam cum Illicio et Wintera seu Drymide constituere Ordinem proprium, WINTEREÆ nomine ab eo insignitum.—*T. insipidam* nunc potius *dipetalam* vocat quia cortex ejus non est omnino aromate destitutus. *Vol.* 1, *pp*. 547, 548.

MAGNOLIA. Sect. II. GWILLIMIA.

Cl. Brown me monet in litteris specimina fructifera Magnoliarum Asiaticarum in Musæo Banksiano servata non essentialiter esse diversa a speciebus Americanis. *Vol.* 1, *p.* 548.

CRUCIFERÆ.

Draba Pumilio, Brown, ii, *p.* 353.

CHORISPORA, R. Brown.

Chorispermi nomen ob nimiam cum Corispermo similitudinem ipse mutavit Cl. Brown, ut me monuit in colloquio, ii, *p.* 435.

STENOPETALUM, R. Brown, ii, *p.* 513.

Stenopetalum lineare, R. Brown, *ibid.*

II. Names of Plants contributed to Decandolle's 'Prodromus Systematis Naturalis Regni Vegetabilis,' vol. i, Parisiis, 1824; vol. iii, 1828.

CAPPARIDEÆ.

Capparis lasiantha, Brown, i, *p.* 247.
— *umbellata*, Brown, *ibid.*

VIOLARIEÆ.

Hymenanthera angustifolia, Brown, i, *p.* 315.
— *dentata*, Brown, *ibid.*

DROSERACEÆ.

Drosera petiolaris, Brown, i, *p.* 318.
— *Banksii*, Brown, i, *p.* 319.
— *Menziesii*, Brown, *ibid.*

TREMANDREÆ.

TREMANDRA, Brown, i, *p.* 344.
— *stelligera*, Brown, *ibid.*
— *diffusa*, Brown, *ibid.*

PASSIFLOREÆ.

Modecca australis, Brown, iii, *p.* 337.

III. Names of species of *Hydrocotyle*, contributed to the 'Monographie du Genre Hydrocotyle, par M. Achille Richard, fils' (Extrait du tome 4 des 'Annales générales des Sciences Physiques,' Bruxelles, 1820).

Hydrocotyle plebeia, Brown MSS., *p*. 46.
— *pulchella*, Brown MSS., *p*. 59.
— *flaccida*, Brown MSS., *p*. 60.
[H. heteromeria, *A. Rich.*]
— *peduncularis*, Brown MSS., *p*. 62.
— *intertexta*, Brown MSS., *p*. 63.
— *hirta*, Brown MSS., *p*. 64.
— *muscosa*, Brown MSS., *p*. 68.
— *tripartita*, Brown MSS., *p*. 69.
— *pusilla*, Brown MSS., *p*. 75.
[H. alata, *A. Rich.*]

IV. Names of species of *Coniferæ*, contributed to Mirbel's "Essai sur la Distribution Géographique des Conifères," in 'Mémoires du Muséum d'Histoire Naturelle,' *vol.* 13, *pp*. 74—76, Paris, 1825.

Callitris sp., R. Br., *p*. 74.
— *glauca*, R. Br., *ibid.*
— *verrucosa*, R. Br., *ibid.*
— *calcarata*, R. Br., *ibid.*
— *robusta*, R. Br., *ibid.*
— *Ventenatii*, R. Br., *ibid.*
— *propinqua*, R. Br., *ibid.*
— *tuberculata*, R. Br., *ibid.*
— *australis*, R. Br., *ibid.*
Podocarpus Nageia, R. Br., *p*. 75.
— *cupressina*, R. Br., *ibid.*
— *polystachya*, R. Br., *ibid.*
— *ensifolia*, R. Br., *ibid.*

Podocarpus elata, R. Br., *p.* 75.
— *spinulosa*, R. Br., *ibid.*
— *spicata*, R. Br., *ibid.*
— *thuyoides*, R. Br., *ibid.*
— *alpina*, R. Br., *ibid.*
— *latifolia*, R. Br., *ibid.*
— *falcata*, R. Br., *ibid.*
— *Antillarum*, R. Br., *p.* 76.

V. Names of species of *Coniferæ*, contributed to Richard's 'Commentatio Botanica de Coniferis et Cycadeis,' Stutgardiæ, 1826.

Callitris rhomboidea, Brown, *p.* 47.
— *fruticosa*, R. Brown MS., *p.* 49.
Cunninghamia (Brown, in litt. non Willd.), *pp.* 86 and 150.

VI. Names referred to by various authors:

Diplachne Baueri, R. Brown, in Desfontaines' "Supplément au Mémoire sur le genre *Chamælaucium*," in 'Mémoires du Muséum d'Histoire Naturelle,' *tom.* v, *p.* 272, Paris, 1819.

Lissochilus speciosus, Br. MSS.
"The name of this fine genus has been communicated to us by Mr. Brown, from his unpublished manuscripts." Lindley, 'Collectanea Botanica,' sub tab. 31; London. 1821.

Harrisonia, *Brown.*
"Nomen generi impositum, quo specimina ejus in Herbario Mus. Paris. inscribuntur," Adrien de Jussieu, in Mémoire sur le groupe des Rutacées, in 'Mémoires

du Muséum d'Histoire Naturelle,' *vol.* xii, *p.* 517 (1825).

Cryptandra pyramidalis, R. Brown MSS., in 'Ad. Brongniart, 'Mémoire sur la Famille des Rhamnées,' in Ann. Sci. Nat., Ser. 1, 10, *p.* 373 (Paris, 1827).

PYCNOSPORA, Brown MSS., Wight and Arn. 'Prodr. Fl. Pen. Ind. Orient.' 1, *p.* 197 (Lond. 1834).

Pycnospora hedysaroides, Brown, *ibid.*

Triphelia brunoides, R. Brown MSS., in Hügel, 'Enumeratio Plantarum Novæ Hollandiæ, Austro-Occidentalis,' *p.* 48 (Vindob. 1837).

Polyosma Cunninghamii, R. Br. MSS., in 'Plantæ Javanicæ Rariores,' *p.* 196 (1840).

VI. Names of Plants quoted from Robert Brown's Herbarium in Bentham's 'Flora Australiensis,' *vols.* 1—6, London, 1863—6.

DILLENIACEÆ.

Hibbertia stricta, R. Br. i, *p.* 27.
— *vetulina*, R. Br., 30.
— *echiifolia*, R. Br., 31.
— *scabra*, R. Br., *ibid.*

MENISPERMEÆ.

Adelioides decumbeus, R. Br., 59.

CAPPARIDEÆ.

Capparis lucida, R. Br., 96.

POLYGALEÆ.

Comesperma aphyllum, R. Br., 143.
— *lanceolatum*, R. Br., 148.

MALVACEÆ.

Sida micropetala, R. Br., 201.
Hibiscus thespesioides, R. Br., 220.

STERCULIACEÆ.

Lasiopetalum rufum, R. Br., 263.

TILIACEÆ.

Triumfetta glaucescens, R. Br., 273.
— *denticulata*, R. Br., 274.
Corchorus Pumilio, R. Br., 277.

LINEÆ.

Erythroxylon ellipticum, R. Br., 284.

RUTACEÆ.

Zieria canescens, R. Br., 305.
— *involucratā*, R. Br., 306.
— *furfuracea*, R. Br., *ibid.*
Boronia affinis, R. Br., 311.
— *albiflora*, R. Br., 317.
Crowea dentata, R. Br., 330.
Eriostemon parvifolius, R. Br., 335.

LEGUMINOSÆ.

Brachysema uniflorum, R. Br., ii, *p.* 12.
Sphærolobium grandiflorum, R. Br., 66.
Daviesia concinna, R. Br., 75.
— *teretifolia*, R. Br., 82.
Pultenæa viscosa, R. Br., 127.
— *rigida*, R. Br., 130.
— *acerosa*, R. Br., 131.
— *hispidula*, R. Br., 133.

Galega reticulata, R. Br., 205.
— *crocea*, R. Br., *ibid.*
— *oblongata*, R. Br., *ibid.*
— *porrecta*, R. Br., 206.
— *astragaloides*, R. Br., 208.
— *juncea*, R. Br., *ibid.*

HALORAGEÆ.

Haloragis paniculata, R. Br., ii, *p.* 481.
— *pusilla*, R. Br., *ibid.*
— *lanceolata*, R. Br., 482.
— *stricta*, R. Br., *ibid.*

COMBRETACEÆ.

Terminalia volucris, R. Br., 498.

MYRTACEÆ.

Calythrix decandra, R. Br., iii, *p.* 48.
— *laricina*, R. Br., 52.
Bæckea Arbuscula, R. Br., 79.
— *pygmæa*, R. Br., 86.
Melaleuca lanceolata, R. Br., 143.
— *cylindrica*, R. Br., 146.
Eucalyptus hypericifolia, R. Br., 203.
— *Baxteri*, R. Br., 207.
— *grandifolia*, R. Br., 250.
— *perfoliata*, R. Br., 253.

LYTHRARIEÆ.

Entelia ammannioides, R. Br., 296.
Ammannia triflora, R. Br., 297.

LORANTHACEÆ.

Loranthus angustifolius, R. Br., 390.

RUBIACEÆ.

Gardenia suffruticosa, R. Br., iii, *p.* 410.
— *fucata,* R. Br., 410.
Ixora triflora, R. Br., 416.
Canthium attenuatum, R. Br., 421.
Opercularia volubilis, R. Br., 435.
Spermacoce brachystema, R. Br., 439.
— *membranacea,* R. Br., 441.
— *purpureo-cærulea,* R. Br., 442.
— *suffruticosa,* R. Br., 443.

COMPOSITÆ.

Aster argutus, R. Br., 488.
Calotis pterosperma, R. Br., 505.
Blumea diffusa, R. Br., 525.
Pluchea dentex, R. Br., 529.

SHORT CONTRIBUTIONS

TO

VARIOUS WORKS,

AND

OCCASIONAL NOTICES,

BOTANICAL AND GEOLOGICAL.

SHORT CONTRIBUTIONS

TO

VARIOUS WORKS.

"IN the preparation of the following notices, I have derived most essential assistance in almost every article, from the information of Mr. Robert Brown; without that aid the account would have wanted those elucidations and explanations which his profound knowledge and research alone could supply, and which has given interest to some of the subjects far beyond what I anticipated or hoped for, before I obtained his promise of co-operation." J. SABINE, "Account of the Edible Fruits of Sierra Leone," in the 'Transactions of the Horticultural Society,' vol. v, p. 441, London, 1824.

ANISOPHYLLÆA, *Brown MSS.*, *ibid.*, p. 446.
Ficus Brassii, Brown MSS., *ibid.*, p. 448.
CARPODINUS, *Brown MSS.*, *ibid.*, p. 455.

"The specimens [of *Hoya*] which I have had the opportunity of examining, afford evidence of the existence of three hitherto undescribed species. The first is a native of the more northern part of New South Wales, with leaves varying from elliptic to obovate; this is in the Herbarium of Mr. Robert Brown, and is named by him *Hoya australis*, it having been referred by him in his 'Prodromus Floræ Novæ Hollandiæ,' vol. i, p. 460, with a doubt, to *H. carnosa*. The second is also in the same collection, and comes from the Nicobar Islands; it has beautiful globose umbels of flowers, which are very numerous in each umbel, and ovate-lanceolate leaves: Mr. Brown has named this *Hoya nicobarica.*" TRAILL, *Accounts and Descriptions of several plants belonging to the genus* Hoya, &c., in the 'Transactions of the Horticultural Society,' vol. vii, London, 1830.

MAYNA, *Raddi.*

"Ihre stellung im Natürlichen System betreffend, reiht sich unsere Pflanze unstreitig zunächst an die *Flacourtianeæ* und *Bixineæ.* Wir haben sie vorläufig mit Fragezeichen zu ersterer Familie in die Nähe von *Hydnocarpus* gestellt, müssen aber dabei einer mündlichen Æusserung R. Brown's gedenken, gemäss welcher sie mit *Hydnocarpus* und *Gynocardia,* Roxb., eine eigene Familie bilden dürfte, deren Aufstellung unser unsterblicher meister hoffentlich später selbst übernehmen wird. ZUCCARINI in *Fasciculus Secundus Plantarum Minus Cognitarum, in Abhandlungen der Königlich Bayerischen Akademie,* band ii, p. 368 (1837).

Prof. Buckland acknowledges assistance from Mr. Brown, in determining the nature of the fossils, for which he states that, at Mr. Brown's suggestion, he had established a new family with the designation *Cycadoideæ. Transactions of Geological Society of London,* 2nd series, vol. ii, p. 395. (*Read June 6th,* 1828.)

In a note following the Preface to Dr. Buckland's 'Bridgewater Treatise,' 2 vols., 8vo, 1836, the author says—

"The scientific reader will feel that much additional value has been added to the present work—from the botanical part having been submitted to Mr. Robert Brown."

It is probable that most of the observations on the structure of *Cycadeæ* and Cycadeous fossils, both in this work and in Prof. Buckland's Paper in the 'Geological Transactions,' were contributed by Mr. Brown; but the following are the only particulars for which he is specifically quoted:

CYCADITES.—M. Ad. Brongniart has referred these two fossil species to a new genus, by the name of *Mantellia nidiformis* and *Mantellia cylindrica*. In my paper just quoted, I applied to them the provisional name of *Cycadoidea megalophylla* and *Cycadoidea microphylla;* but Mr. Brown is of opinion that until sufficient reasons are assigned for separating them from the genus *Cycas* or *Zamia*, the provisional name of *Cycadites* is more appropriate, as expressing the present state of our knowledge upon this subject. Buckland's *Bridgewater Treatise*, vol. i, p. 496, note (1836).

In the vascular bundles within the fossil petioles, Mr. Brown has recognised the presence of spiral, or scalariform vessels (*Vasa scalariformia*), such as are found in the petioles of recent *Cycadeæ;* he has also detected similar vessels in the laminated circle within the trunk of the fossil buds next to be described. The existence of vessels with discs peculiar to recent *Cycadeæ* and *Coniferæ*, such as have been described in speaking of fossil *Coniferæ*, has not yet been ascertained. *Ibid.*, p. 499, note.

PODOCARYA.

This fossil was found by the late Mr. Page, of Bishport, near Bristol, in the lower regions of the Inferior Oolite formation on the east of Charmouth, Dorset, and is now in the Oxford Museum. The size of this fruit is that of a large orange; its surface is occupied by a stellated covering or Epicarpium composed of hexagonal tubercles, forming the summit of cells, which occupy the entire circumference of the fruit.

Within each cell is contained a single seed, resembling a small grain of rice, more or less compressed, and usually hexagonal. Where the Epicarpium is removed, the points of the seeds are seen, thickly studded over the surface of the fruit. The bases of the cells are separated from the receptacle, by a congeries of footstalks formed of a dense mass of fibres, resembling the fibres beneath the base of the seeds of the modern *Pandanus*. As this position of the seeds upon footstalks, composed of long rigid fibres, at a distance from the receptacle, is a character that exists in no other family than the *Pandaneæ*, we are hereby enabled to connect our fossil fruit with this remarkable tribe of plants, as a new genus, *Podocarya*. I owe the suggestion of this name, and much of my information on this subject, to the kindness of my friend, Mr. Robert Brown.

The large spherical fruit of *Pandanus*, hanging on its parent tree, is represented at pl. lxxxiv, fig. 1. Fig. 11 is the summit of one of the many drupes into which this fruit is usually divided. Each cell, when not barren, contains a single, oblong, slender seed; the cells in each drupe vary from two to fourteen in number, and many of them are abortive. The seeds within each drupe of *Pandanus* are enclosed in a hard nut. These nuts are wanting in *Podocarya*, whose seeds are smaller than those of *Pandaneæ*, and not collected into drupes, but dispersed uniformly in single cells over the entire circumference of the fruit. The collection of the seeds into drupes, surrounded by a hard nut, in the fruit of *Pandanus*, forms the essential difference between this genus and our new genus *Podocarya*.

In the fruit of *Pandanus* the summit of each cell is covered with a hard cup or tubercle, irregularly hexagonal; and crowned at its apex with the remains of a withered stigma. We have a similar covering of hexagonal tubercles over the cells of *Podocarya*. The remains of a stigma appear also in the centre of those hexagons above the apex of each seed. Buckland's *Bridgewater Treatise*, vol. i pp. 504, 505 (1836).

In the title-page to the edition of Dr. Buckland's 'Bridgewater Treatise,' published in 1858, after the death both of the author and of Mr. Brown, Mr. Brown's name is placed as having made additions to it. That Mr. Brown suggested to Dr. Buckland many of the remarks contained in the botanical portion of his Treatise, as well as of those contained in his previous papers on the *Cycadoideæ*, in the

'Geological Society's Transactions,' there can be no doubt; but the only "additions" indicated in the notes to this, the third edition, appear to be the following:

Mr. Robert Brown has ascertained, by examination of a trunk of *Cycadites microphyllus*, from Portland, the existence of scalariform vessels without discs, in the mature trunk; a point in which, he informs me, these fossils agree with the American portion of the order *Cycadeæ*, though, in other respects, they bear a greater resemblance to the African and Australian species. Mr. Brown observes further, that the order *Cycadeæ* presents but one genus in America, namely, the *Zamia*, on which this genus was originally founded, and to which it has been recently restricted; and that the coincidence in the structure of the scalariform vessels in the trunk of this *Zamia* of the New World, with that of the fossil *Cycadites* of Europe, is very remarkable. Buckland's *Bridgewater Treatise*, new edition, 1858, vol. i, pp. 461, 462.

Mr. Robert Brown has noticed in the cellular tissue of a silicified trunk of *Cycadites*, portions of chalcedony bearing the form of extravasated gum within the trunks of recent *Cycadeæ*. He has also recognised spiral vessels in the laminated woody circle of a mature trunk of fossil *Cycadites*, and also in the laminated circle within a silicified bud of the same, near its origin. *Ibid.*, vol. ii, p. 102.

Mr. [now Sir] R. I. Murchison, in a paper on the "Fossils found at Œningen," says—

"Mr. R. Brown has discovered that among these plants, one is almost indistinguishable in the leaf from the *Acer villosum*, a species of maple brought from Nepaul by Dr. Wallich." *Geol. Trans.*, 2nd ser., vol. iii, *p.* 287 (1835).

Mr. Horner, in a note to his paper "On the Geology of the Environs of Bonn," says—

"I visited the lignite deposit at Friesdorf, in September, 1835, in company with Mr. Robert Brown, when he collected several specimens of the vegetable remains. He informs me that all the wood he found is coniferous." *Geol. Trans.*, 2nd ser., vol. iv, p. 474 (1836).

Mr. Charles Stokes in his "Notice respecting a piece of Recent Wood partly petrified by Carbonate of Lime" (*Trans. Geol. Soc. of London*, 2nd series, vol. v, p. 207, 1840), acknowledges assistance obtained from Mr. Brown, and in a "Further Notice" appended to this paper (l. c., p. 213) he says—

"Since I communicated to the Geological Society the preceding notice on the partly petrified wood from the ancient Roman aqueduct of Eilsen, in the principality of Lippe Buckeberg, Mr. Robert Brown has shown to me a specimen from the same piece of wood, which was presented to him at Tharand, in the month of October last, by M. Cotta of that place, who discovered the wood in the aqueduct, and remarked its peculiar condition. Mr. Brown has pointed out to me, in the longitudinal section, that the petrified portions, in his specimen, are about two inches in length, and in the middle part, nearly a quarter of an inch in diameter, and terminate in a point at each end. The petrified portions are, in these instances, completely enclosed within and surrounded by the unchanged wood. See pl. xvi, fig. 3."

"Mr. Brown has observed another remarkable circumstance in the condition of these petrified portions. The change of the longitudinal fibres appears to be complete, but the medullary rays, of which the ends are seen in this section are still in their ligneous state, as shown in the magnified engraving, pl. xvi, fig. 4."

Dr. Fitton, in his paper "On the Strata below the Chalk," says—

"From the evidence afforded by thin transparent slices, both of the transverse and longitudinal sections which have been examined under the microscope by Mr. Brown, the fossil trunks of Portland are found to possess the characters uniformly belonging to coniferous wood; but it must be observed that these characters are not absolutely confined to Coniferæ." *Geol. Trans.*, 2nd series, vol. iv, p. 222 (1836).

"A point which Mr. Brown considers as well deserving of remark is, that the only remains of vegetables hitherto found in these strata, under the circumstances above described, belong to two nearly related families, Coniferæ and Cycadeæ, which have lately been regarded as forming a distinct class, characterised not only by greater simplicity of the parts of fructification, but also by some peculiarities of the internal structure, and thence have been considered as intermediate between Phænogamous and Cryptogamous or Acotyledonous plants." *Ibid.* p. 225.

"A cone has recently been found on the shore of the Isle of Portland, not improbably derived from one of the beds of clay, or 'Dirt,' subordinate to the lower part of the Portland strata, the structure of which, according to Mr. Brown, approaches in some respects to that of *Araucaria.* I am indebted to the kindness of the Rev. David Williams, of Cross, near Bleadon, in Somersetshire, to whom it belongs, for an opportunity of submitting this beautiful specimen to the examination of Mr. Brown, who will, I hope, describe its structure in the 'Transactions of the Linnean Society.'" *Ibid.* p. 349.

Mr. [now Prof.] Morris, in his appendix to Mr. Prestwich's memoir "On the Geology of Coalbrook Dale," under the description of pl. xxxviii, says—

"*Stigmaria ficoides.* In the 'Fossil Flora,' t. 31—36, are figures and descriptions of *Stigmaria ficoides*, and at t. 156 is shown the structure of the same; and although we cannot add much new information to that previously given by Prof. Lindley, it has been thought advisable to have another section represented, with a view of showing what has hitherto not been well illustrated in the published figures of its structure. The internal cylinder in the specimen (fig. 3) is eccentric, and consists of wedge-like portions of vascular tissue, the rounded origin of which, internally, is well defined; these wedges are generally of equal or nearly equal size, but they occasionally become confluent by the joining of two or more of them together. The form of the space necessarily left, or interstices between the sections where these are distinct, varies a little; in some cases being of nearly equal breadth throughout, and in others becoming narrower outwards, and appearing to terminate or contract about the middle of the vascular tissue, beyond which they again frequently widen outwards: these spaces often contain portions of oblique and smaller vascular cords, apparently arising at different depths in the vascular cylinder; the origin and connection of which with the cylinder is shown in the oblique section, where a single series of vessels is seen passing from it, surrounded by tissue of smaller diameter. Pl. xxxviii, fig. 3 *a.*"

"In no specimen yet examined has the course of the oblique cords been absolutely ascertained, but there can scarcely be any doubt, as suggested by Mr. Brown (to whom we are also indebted for the above observations), that those vessels after arising from the cylinder passed to the tubercles of the surface, through the thick cellular tissue which once probably occupied the larger space in the original plant. The discovery of these smaller oblique vessels is an interesting feature in the anatomy of *Stigmaria;* and they have also been pointed out by Mr. Brown as existing in *Anabathra*, and one of these is actually figured by Mr. Witham, in his work, ('On the Internal Structure of Fossil Vegetables,' 2nd edit., t. 8, f. 12), but considered by him (p. 41) as a section of a medullary ray. The analogous vessels existing in *Lepidodendron Harcourtii*, as figured by Mr. Witham ('Trans. of the Nat. Hist. Soc. of Newcastle, 1832'), appear to arise from the outer part of the vascular cylinder. A somewhat similar arrangement is also found in that division of *Lycopodiaceæ*, consisting of *Psilotum* and *Tmesipteris:* in those genera the vascular cylinder, from which the oblique cords proceed, includes a central pith (Brongniart, 'Hist. des Végét. Foss.,' tom. ii, pp. 44, 45).

"Fig. 3 *b.* Shows that the vessels are much smaller at the internal rounded portions of the wedges.

"Fig. 3 *c.* Exhibits the oblique cords, consisting of smaller vessels surrounding vessels of a larger diameter nearly equal to those forming the vertical tissue.

"Fig. 3 *a*. Is an oblique section, which exhibits the connection of these vascular cords with the vertical tissue." *Trans. Geol. Soc.*, 2nd ser. vol. v (1840).

PETROPHILOIDES.

"Upon showing the fossil cones to Dr. R. Brown, he very kindly pointed out to me the affinity existing between them and the genera *Petrophila* and *Leucadendron*, and particularly with one species of the former genus—*Petrophila diversifolia*—described in his 'Prodromus Floræ Novæ Hollandiæ,' page 365."

Dr. Bowerbank's '*History of the Fossil Fruits and Cones of the London Clay*,' page 43 (1840).

Mr. [now Sir] C. Lyell, in a paper 'On the Boulder Formation and Freshwater Deposits of Eastern Norfolk,' says—

"Among the vegetable fossils the most common and best preserved are the seed-vessels of an aquatic plant which Mr. R. Brown refers to *Ceratophyllum demersum*, English Botany, 947."—*London and Edin. Phil. Mag.*, vol. 15, p. 355 (1840).

Lieut. Newbould says that Mr. R. Brown determined the specimens of fossil wood brought by him from Egypt "to be dicotyledonous, and not coniferous."—*Geol. Proc.* iii, p. 787. (*Read Jan.* 29, 1842.)

Dr. Mantell, in a paper 'On Fruits from the Cretaceous Rocks,' says, under *Carpolithes Smithiæ*—

"I am indebted to Dr. Robert Brown for the careful examination of this fossil, and he informed me that he knew of no fruit to which it bore any near affinity, but suggested that the original was probably a succulent compound berry, the seeds appearing to have been imbedded in a pulpy substance, like the fruit of a mulberry, which is a spurious compound berry, formed by a partial union of the enlarged and fleshy calyces, each enclosing a dry membranous pericarp.—*Quart. Journ. Geol. Soc.*, vol. ii, p. 54 (1846).

The President exhibited portions of trunks of Winter's-bark trees from the Straits of Magellan, cut down in 1826 by Capt. P. P. King, R.N., offering inscriptions made through the bark by a midshipman who accompanied the Spanish expedition under Captain Cordoba in 1786, and by one of the companions of Captain Bougainville in 1767; the annual rings in the former case distinctly corresponding with the interval between 1786 and 1826. He also made some observations on the structure of the woody vessels of the genus.—*Proc. Linn. Soc.*, ii, p. 95 (June 18, 1850).

The President exhibited specimens of stems of *Kingia australis*, R. Br., and *Xanthorrhœa arborea*, R. Br., together with drawings of the former illustrative of its structure, especially of the siliceous covering of the vascular fasciculi of the persistent bases of the leaves; and in both genera, the means by which the stems are protected from the scorching fires of the natives.—*Proc. Linn. Soc.*, ii, p. 113—4 (Feb. 4, 1851).

The President exhibited specimens of the three known species of *Rafflesia* (*R. Arnoldi*, *R. Patma*, and *R. Cumingii*, particularly with the view of showing that they are all three diœcious.—*Proc. Linn. Soc.*, ii, p. 128 (April 15, 1851).

The President exhibited numerous specimens of recent and fossil *Cycadeæ*. Among these was a fine specimen of a new species (*Cycadites Saxbyanus*, R. Br.) found in the Isle of Wight by Mr. Saxby, of Bonchurch. The President remarked, that all the specimens of *Cycadites* hitherto found in the Isle of Wight agreed in having an elliptical outline, unaccompanied with any inequality in the woody ellipsis, and also in having a bud in the axilla of each leaf; in these respects differing from the *Cycadites* of the Isle of Portland, and from all the recent species of *Cycadeæ* with which we are acquainted, which have a circular outline and only scattered buds.—*Proc..Linn. Soc.*, ii, p. 130 (May 6,1851).

INCARVILLEA.

Having, in examining the Himalayan species of *Incarvillea*, observed some appearances not mentioned in, or at variance with, the descriptions of that genus by Jussieu and Lamarck, I was induced to ask the opinion of the highest authority on the subject, and Mr. Brown has been good enough to favour me with his opinion that the Himalayan species are too closely allied to be separated into a genus distinct from the Chinese *Incarvillea*, but are yet sufficiently distinguished to constitute a sub-genus. He has been good enough to enrich my work with the character of this, and an amendment of the genus *Incarvillea*.

INCARVILLEA. Juss. Gen. 138.

" *Calyx* 5-dentatus, nunc 10-dentatus, [dentibus] alternis (accessoriis) membranaceis. *Corolla* fauce ventricosa; limbo 5-lobo inæquali. *Stamina* antherifera quatuor, didynama, inclusa. *Antheræ* lobis distinctis apice convergentibus, singulis infra apicem processu subulato munitis! Stigma bilamellosum. *Capsula* siliquæformis, bilocularis, bivalvis; septo contrario libero intra marginem seminifero. *Semina* suspensa (v. membranaceo-marginata v. comosa), radicula supera.

"Herbæ alternifoliæ foliis pinnatis bipinnatifidisve; racemi terminalis longi pedicellis tribracteatis. Rudimentum filamenti quinti (primum in Amphicome detectum a D. Royle). Genus Bignoniaceis adjiciendum, in sectione tamen propria ob habitum et semina pendula, radicula supera (v. Prodr.

Flor. Nov.-Holl. 1, p. 471) locandum et in duo subgenera dividendum. Horum alterum INCARVILLEA *Juss.* Chinense, distinguitur, foliis bipinnatifidis; calyce, præter normales, dentibus 5 accessoriis sinuum loco membranaceis emarginatis; seminibus obovatis margine lato membranaceo indiviso cinctis.

"Alterum, AMPHICOME (Cyrtandraceis quodammodo accedens) ex Indiæ septentrionalis montibus: foliis pinnatis foliolis incisis; calyce 5-dentato sinubus simplicibus; seminibus fere subulatis utrinque acutis, basi et apice membrana capillaceo-lacera comosis."

Illustrations of the Botany of the Himalayan Mountains, by J. Forbes Royle, M.D. Pp. 295, 296. London, 1839.

HEDYCHIUM.

SECT. D. *Brachychilum,* Brown MSS. *Labellum* nanum, retusum, sessile. *Stigma* bilabiatum, labio inferiore triplo longiore.

H. (*Brachychilum*) *Horsfieldii,* Brown MSS.; glabrum, foliis lanceolatis acuminatis, spica laxiuscula, bracteis ovatis 2—3-floris, tubo gracili, limbi interioris laciniis lateralibus ovalibus obtusiusculis exteriores lanceolatas acutas latitudine triplo excedentibus.

Patria, Mons Prahn Javæ, *Horsfield in Herb Banks.*

I am indebted to my illustrious friend, Mr. Brown, for the following details of the inflorescence of this most singular plant, which I have copied from the original manuscript, lent to me on purpose, and which was written in 1815, when Dr. Horsfield sent the specimen from Java to the late Sir Joseph Banks.

"Planta elegans, glabra, rhizomatosa, juxta specimen unicum in herbario citato circiter bipedalis. *Folia* punctis lineolisque longitudinalibus creberrimis notata. *Calyx* glenduloso-punctatus, tubo tertiâ parte brevior, ore hinc fisso inde acervulo pubescentiæ.

"*Limbi exterioris laciniæ* angusti-lanceolatæ, concaviusculæ, acutæ, tubo breviores, post expansionem reflexæ; tertia acumine brevi subulato; *interioris laciniæ laterales* ovales, obtusiusculæ, longitudine limbi exterioris, ejusdem laciniis duplo et ultra latiores, punctis minutis glandulosis creberrimis instructæ, immerse venosæ. *Labellum* minutum, vix octavam partem longitudinis lateralium emetiens, latius quam longum, retusum, punctatum. *Filamentum* intra laciniam acuminatam limbi exterioris insertum, cum basi labelli oppositi quasi continuum, breve, lineare, concaviusculum. *Anthera* lato-linearis, apice nuda, basi semibifida. *Stigma* bilabiatum, hispidum, labiis ciliatis, inferiore triplo longiore subovato."

Wallich, "Attempt to define the Species of *Hedychium*," in '*Kew Journal of Botany*,' vol. v, p. 376-7 (1853).

INDEX OF SUBJECTS

TO

VOL II.

Abel, Clarke, characters and descriptions of three new species of plants found in China by, 319—328; notice of his collection, 326

Acicarpha, observations on the genus, with description of a new species, 307—309; proposed as the type of a new family, 309; further observations on, 312—318

Actinophora, affinities of the genus, 646

Albumen, its origin, 23; occasional existence in Proteaceæ, ibid.; and in Cyrtandraceæ, 587; its importance, 587 *note;* in Sterculiaceæ, 623

Allium descendens, exceptional order of expansion of the flowers of, 280

Anadenia, exceptional order of expansion of the flowers of certain species of, 280

Angianthus, synonymy of the genus, 283

Antheræ, their examination at an early period universally neglected, 6; great advantage of this examination, ibid.; their structure in Orchideæ and Asclepiadeæ, ibid.; views of Linnæus, Jussieu, and Richard on this subject in Asclepiadeæ, ibid.; views of Jacquin, Koelreuter, Rottboell, Cavanilles, Smith, and Desfontaines, 7; views of the author, 7, 8; and in Orchideæ, 9; development of in Asclepiadeæ, 197, 198; arrangement of in Sterculiaceæ, 623

Antennaria, history and characters of the genus, 300—302

Apocineæ, difficulty of circumscribing the order, 195; subdivision of it, ibid.; characters and descriptions of the genera, and species of the section of the order "seminibus comosis," 232—247

Ascidia of Cephalotus and other pitcher-plants, observations on the, 357

Asclepiadeæ, views of various authors as to the structure of the Antheræ in, 6—8; examination of, 8; memoir on the order, 193, &c.; characters and descriptions of the order, genera, and species, 200—231; observations on the flower in its earlier stages, 196—198

Asphodeleæ, order of reduction of stamina in, 278

Baccharis, history and characters of the genus, 293-4

Banks, Sir Joseph, his invaluable herbarium and library, 31, 199; important results of his voyage, 163

Begonia, order of expansion of flowers, and position of female flowers in, 279 *note*

Bennettia, observations on the structure and affinities of the genus, 663, 664; characters of the species of, 665

Bentham's Flora Australiensis, names of plants quoted in, from Mr. Brown's herbarium, 708—711

Bocconia, reductions of pistillum in, 272

Boopideæ, proposed as a family, by M.

Cassini, 312; observations on, 312—318; position of ovulum and radicle in, 313; other distinctive characters of the family, 314, &c.
'Botanical Magazine,' contributions to, 667, &c.
'Botanical Register,' contributions to, 681, &c.
Bowerbank, Dr., notice of a fossil cone referred to Petrophila, in his 'History of the Fossil Fruits of the London Clay,' 723
Brunonia, its relations to Goodenoviæ and Compositæ, 267 *note;* observations on its affinities, 310, 311; nervures of its corolla, 310; structure of its ovarium, 311; structure of the indusium of its stigma, 312
Buckland, contributions to his papers on Cycadites, and to his 'Bridgwater Treatise,' 716—719
Buttneriaceæ, gradually pass into Tiliaceæ, 646
Buxbaumia, observations on the genus, 349—351
Buxbaumia aphylla, nature of its peristomium, 350, 351; inner membrane of its capsule, 351; furnished with perfect leaves, ibid.

Cæsulia, nature of capitulum of, 275-6
Calea, history, synonymy, and subdivision of the genus, 287—307
Calycereæ, proposed as a new family, 309; further observations on, 312—318: the name superseded by that of Boopideæ, 313
Calytrix, observations on the genus and on the species composing it, 684
Calyx and adhering tube of corolla, separability of, in some species of Goodenia, 267 *note*
Campanulaceæ, æstivation of corolla in, 269 *note*
Capitulum of compositæ, order of expansion of florets in the, 273-7
Caprifoliaceæ, limitation of the family, with observations on the genera composing it, 324; further observations on the genera, 673
Cardiopteris, observations on the structure and affinities of the genus, 657—659
Cassinia, characters of the genus, with a synopsis of the species, 304—306
Catesbæa, arrangement of the nerves of the corolla in, 268
Celtis, order of expansion of flowers, and position of female flowers in, 279
Cephaloteæ, establishment of the family, 357
Cephalotus, remarks on the structure and affinities of, 353—359; account of the ripe fruit of, 356; entitled to rank as a distinct family, 357; nature of its ascidia, ibid.
Cestrum, arrangement of nerves in the corolla of, 267
Chalaza, manifest in the seeds of all Proteaceæ, 22, 23; its nature and function, 23
China, characters and descriptions of three new species of plants found in, 319—328
Cleome, species quæ in horto Kewensi coluntur, 413—415
Compositæ, observations on the natural family of plants called, 267—318: object of the memoir, 259; arrangement of nerves in the corolla of, 260—268; claim of M. Cassini to priority in regard to this arrangement, 261; refuted, 261-2; observations of Grew, Van Berkhey, Schmidel, Batsch, Schkuhr, Mirbel, and Cassini, 262—264; remarks on M. Cassini's statement, 264—267; nerves in the corolla of Goodenoviæ, 266; in Ernodea, Datura and Cestrum, 267; æstivation of the corolla, 268-9; exceptions to in Chuquiraga and Corymbium, 269; form of pollen, 269-70; disposition of the stigmata, 270; structure of ovarium, 270-72; inflorescence and order of expansion of the florets, 272—281; on what dependent, 276: genera et species quædam quæ in horto Kewensi coluntur, 459—470
Craspedia, history and synonymy of the genus, 285
Cruciferæ, type of pistillum, and of obliterations in, 272; genera et species cruciferarum quæ in horto Kewensi coluntur, 367—413
Cycadites, observations on the struc-

ture of, 716—719; Saxbyanus, account of, 724
Cyrtandraceæ, observations on, and monograph of the order, 584—610; history of the order, 584—586; affinity of, 386—588; relation of stigmata and placentæ in, 386
Cyrtandreæ, modifications of the different parts of fructification in, 590—594

Datura, arrangement of nerves in the corolla of, 267
Dawsonia, nature and origin of its peristomium and columella, 331-2
Decandolle's 'Systema Vegetabilium,' names, &c., of plants contributed by Mr. Brown to, 703; 'Prodromus,' names, &c., of plants, contributed to, 705
Dipsaceæ, inflorescence of, and order of expansion of flowers in, 277-8; position of ovarium in, 314-5
Dryander, advice and assistance derived from him, 31
Dryandra, observations on the genus, 179

Echinops, nature of capitulum, 274-5
Embryo, direction of, in the Sterculiaceæ, 621-2
Ernodea, arrangement of nerves in the corolla of, 267
Euphorbia, its inflorescence, 279 and *note*, 280; relative position of sexes in, 280

Ferns, number of species known to Linnæus, 251; to Willdenow, ibid.; known in, 1838, 565; vasa scalariformia, their arrangement in, 564; ramification of veins, and relation of veins to sori in, 565—570; seeds of, useful in distinguishing genera, 276
Fitton, Dr., notice of fossil Coniferæ and Cycadeæ in his paper 'On the Strata below the Chalk,' 720-1
Franklin, extracts from the botanical appendix to his 'Narrative of a Journey to the Shores of the Polar Sea,' and addenda, 511—527
Fruit of Proteaceæ, its nature, 21, 22; its varieties in the order, 22

Globularia cordifolia, arrangement of the nerves of the corolla in 315-6
Goodenia, separability of calyx and of adhering tube of the corolla in some species of, 267
Goodenoviæ, arrangement of nerves in the corolla of, 266; its analogy to that of Compositæ, 267 *note;* æstivation of corolla in, 269 *note;* type of pistillum and reductions of, 272; structure of the indusium of its stigma, 312
Gramineæ, nature of inflorescence of, 276-7; order of expansion of flowers in, 277; composition of inner valve of the flower in, 571-2
Grevillea, exceptional order of expansion of the flowers in certain species of, 280
Grindelia, history, characters, and extent of the genus, 282-3
Gymnostomum, structure of various species referred to the genus, 342—5; great diversity in these species, ibid.

Hedychium, account of a new subgenus and species of, 725-6
Hernandiaceæ, observations on the family, 651
Horner, Mr. Leonard, note on coniferous wood in his paper on the 'Geology of Bonn,' 719
Horsfield, extracts from his 'Plantæ Javanicæ Rariores,' 557, &c.
Hortus Kewensis, extracts from the second edition of, 367—510
Humboldt, his observations on a remarkable difference in the distribution of the species of plants, 12
Hymenostomum, establishment of the genus, 342

Incarvillea, observations on the genus, 725
Indian plants, names of and notes on, extracted from Dr. Wallich's 'List,' 529—538; notes and observations on, extracted from Dr. Wallich's 'Plantæ Asiaticæ Rariores,' 539—556
Inflorescence, types of, and order of expansion of flowers, 272—281; in Compositæ, ibid.; in Umbelliferæ, 273 *note;* in Gramineæ, 276-7;

in Dipsaceæ, 277-8; in Boopideæ, 316
Iödes, affinities of the genus, 651-2

Jacaranda, observations on the genus and on its species, 670-1
Junceæ, order of reduction of stamina in, 278

Kingia Australis, notice of the structure of its stem, 724

Lagasca, nature of capitulum of, 374-5
Lambertia, inflorescence of, and order of reduction of the flowers of, 280-1
Leguminosæ, genera et species quædam quæ in horto Kewensi coluntur, 417—447
Leontopodium, establishment of the genus, 302
Leptostomum, observations on the genus, 341—349; reasons for retaining it, 342-3
Leucadendron, reasons for differing from Salisbury on the application of the Linnean name, 29—31; history of the genus, ibid.; observations on the separation of sexes in, 40-1
Liliaceæ, order of reduction of stamina in, 178
Limnanthus, characters and description of, 361-364
Limnantheæ, establishment of the family, 363; characters, 364
Linnean System of Botany, advantages derived from the, 5
Lobeliaceæ, æstivation of corolla in, 269 *note*
Lyellia, characters and description of, a new genus of mosses, &c., 329—356; characters of the genus, 332—334; structure of its columella, and mode of dispersion of its seeds, 335; use of the pores at the base of its capsule, ibid.; its position in the family, 336

Mantell, Dr., note on Carpolithes Smithiæ, in his paper on 'Fruits from the Cretaceous Rocks,' 723
Melampodium, history and synonymy of the genus, 284-5
Metalasia, establishment of the genus, 302
Meyera, history and synonymy of the genus, 283-4
Mirbel, names of species of Coniferæ contributed to his 'Essai,' 706
Morris, Prof., notice of Stigmaria, in his paper 'On the Geology of Coalbrook Dale,' 721—723
Mosses, necessity of additional sources of distinction in the genera of, 345; nature of some of these sources, 346
Murchison, Sir R. I., note on a fossil leaf, in his paper on Œningen fossils, 719
Myrtaceæ, genera et species quædam quæ in horto Kewensi coluntur, 449—487

Nepenthes, its place in the natural series, 358: distinctions between Cytineæ and, ibid.; its spiral vessels, ibid.
Newbould, Lieut., notice of fossil wood from Egypt, in his paper on the subject, 723
Nivenia, reasons for changing Salisbury's generic name, 110

Orchideæ, structure of anthera in, 6, 9; genera et species quæ in horto Kewensi coluntur, 471—499
Ovarium, utility of ascertaining its internal condition before fœcundation, 5; steadily kept in view by A. du Petit-Thouars, ibid.; its importance in Proteaceæ, 19, 20; its structure in Compositæ, 270
Ovula, importance of their insertion as well as number, 20; insertion, direction, and relation to ovarium, 313
Ozothamnus, characters of and observations on the genus, 303—304

Peristomium of mosses, observations on the, 346—349; of Buxbaumia, 350-1
Petit-Thouars, Aubert du, almost the only botanist who has steadily kept in view the internal condition of the ovarium before fœcundation, 5
Petrophila, observations on the sexes in the genus, 55, 56
Phytocreneæ, characters of the family

and of the genera composing it, 652-3
Pistillum of all Phænogamous plants considered as formed on the same plan, of which a polyspermous legumen or folliculus, whose seeds are disposed in a double series, may be taken as the type, 270; a circular series of these pistilla disposed round an imaginary axis, and whose number corresponds with that of the parts of the calyx or corolla, enters into the author's notion of a flower complete in its parts, ibid.; deviations from this type and number, how accounted for, ibid.; the type and its reduction in the family of Proteaceæ, 272; in Goodenoviæ, ibid.; in Cruciferæ, ibid.; order of development of stamina and pistilla, 281
Pittosporum revolutum, arrangement of nerves of the corolla in, 268 *note*
Plantæ Javanicæ Rariores, extracts from, 557, &c.
Plantago, an exception to the ordinary rule of development of stamina and pistilla, 281
Podocarya, a fossil fruit referrible to Pandaneæ, observations on, 717-8
Pollen, importance of its figure in fixing our notions of the limits of genera, 19; form of, in Compositæ, 269-70
Polypodium, expediency of subdividing the genus, 252; divisions proposed, 565—570
Polytrichoideæ, distinguishing characters of the group, 336—341; structure of peristomium in, 340
Polytrichum, characters of the genus, 336; structure of the lamellæ in, ibid.; form and position of male flowers in, 337; double calyptra of, ibid.; teeth of peristomium in, ibid.; transverse membrane of tympanum in, ibid.; various forms of capsule in, 338; inner membrane of capsule in, ibid.; inner peristomium of, 339; columella of, 339-40: seeds of, 340.
Portlandia, arrangement of the nerves of the corolla in, 268
Poterium, order of expansion of flowers and position of female flowers in its spike, 279
Protea, reasons for differing from Salisbury in the application of the Linnean name, 24—29; history of the genus, 25—29
Proteaceæ, on the natural order of, 3; remarks on its geographical distribution, 9; almost entirely confined to the southern hemisphere, 9; occurs in the greatest abundance and variety in Southern Africa and New Holland, 10; its distribution in New Holland, 10—12; stations and elevations at which its species are found, 13; pubescence of, 14; disposition of, 14, 15; form and division of leaves, 15; inflorescence of, ibid.; calyx of, why so considered, 15, 16; identity of calyx with the organ so called in Thymeleæ, 16; better called perianthium, or perigonium, ibid.; invariably divided into four leaves or segments, ibid.; æstivation of, 16, 17; its colour useful in indicating genera, 17; scales surrounding the ovarium, their use, importance, and number, ibid.; varieties in structure, or apparent origin of stamina, 17, 18; deviations from the usual structure of antheræ in, 18; figure of the pollen in, 19; its importance in fixing the limits of genera, ibid.; internal structure of the ovarium of the greatest importance, 19, 20; number and insertion of ovula, 20; position of radicle, ibid.; form of style, ibid.; form and direction of stigma, 20, 21; nature of fruit, 21, 22; its varieties in the order, 22; chalaza always manifest, 22, 23; its nature and functions, 23; albumen, its origin, 23; occasional existence in Proteaceæ, ibid.; radicula always points towards the base of the fruit, 23, 24; plumula inconspicuous in the whole order, 24; cotyledons, when more than two of little importance, 24; genera formed before the publication of Salisbury's arrangement of the family, 24; reasons for differing from Salisbury in the application of the Linnean

names Protea and Leucadendron, 24—31: characters and descriptions of the order, its genera and species, 32—192; type of the pistillum, and its reductions in, 272

Radicula, its direction in Proteaceæ uniformly pointing towards the base of the fruit, 20, 23, 24; relation of its direction to ovulum and to ovary, 313-4
Rafflesia, all the three known species shown to be diæcious, 724
Restiaceæ, order of reduction of stamina in, 278
Richard, Achille, names of species of Hydrocotyle, contributed to his 'Monographie,' 706
Richard, Louis Claude, names of species of Coniferæ, contributed to his 'Commentatio,' 707
Richardson, Dr., extracts from his botanical appendix to the narrative of a journey to the shores of the Polar Sea, by Captain Franklin, and addenda, 511—527
Royle, Dr., observations on Incarvillea, from his 'Botany of the Himalayan Mountains,' 725
Rubiaceæ, difficulty of circumscribing the order, 195; æstivation of corolla in, 269 *note*

Sabine, Joseph, contributions to his 'Account of the Edible Fruits of Sierra Leone,' 715
Sarcostigma, affinities of the genus, 651-2
Scabiosa, inflorescence of certain species of, 278; order of expansion of flowers in, ibid.
Seeds, non-existence of naked, 21; dispersion of, in Polytrichoideæ, how secured, 335, 340-1
Sexes, in the separation of, in flowers, the female the more perfect, 279; and the earliest developed, ibid.; exceptions to, 279, 280
Solander, Dr., his description of Knightia given as a specimen of the accuracy with which he described specimens of natural history, 163
Soliva, history, characters, and extent of the genus, 282
Spike, order of expansion of flowers in a simple and in a compound, 273
Spiral vessels of Nepenthes, 358-9
Stamina and pistilla, importance of attending to their state before the expansion of the flower, 5; order of reduction of stamina in various families, 278; order of development of stamina and pistilla, 281; origin of glandular disk in various families from inperfect stamina, 317-8; objections to this view, ibid.
Sterculiaceæ, history of the family, 613—621; observations on the relative importance of the different organs in the formation of genera in, 621—624; direction of embryo in, 621; monograph of, 611—644
Stigma, in Proteaceæ, its form and direction, 20, 21; in Asclepiadeæ, its development, 196—198; disposition of stigmata in Compositæ, 270; nature of the indusium in Brunonia and Goodenoviæ, 312
Stokes, Mr. Charles, notice on partly petrified wood, in his paper on the subject, 720
Style, its utility in the generic characters of Proteaceæ, 20; coherence of its base with the apex of the tube of the calyx in Boopideæ, 315
Stylideæ, position of stamina in, 312

Tiliaceæ, gradually pass into Buttneriaceæ, 646
Traill, contributions to his 'Account of the genus Hoya,' 715-6
Tridax, history of the genus, 283

Umbelliferæ, surface of the pericarpium in, 267 *note;* order of expansion of flowers in, 273 *note*

Vestia referred to Solaneæ, 683

Wallich, Dr., account of a new subgenus and species of Hedychium,

from his monograph of the genus, 725-6
Winter's bark, notice of trunks of, containing inscriptions, and of the structure of their woody vessels, 724
Woodsia, a new genus of ferns, observations on, 249—255 ; singularity of structure of its involucrum, 252-3 ; characters of the genus and its species, 253-4

Xanthorrhœa arborea, notice of the structure of its stem, 724

Zuccarini, notice of the genus Mayna and its affinities, in his 'Plantæ minus Cognitæ,' 716

INDEX OF NAMES OF PLANTS

TO

BOTH VOLUMES.

Abelia, i, 448; ii, 324, 541, 673
  Chinensis, ii, 325, 541
  triflora, ii, 531, 541
  uniflora, ii, 542
Abelmoschus, ii, 546
Abroma, i, 11; ii, 509
  augusta, ii, 509
  fastuosa, ii, 509, 510
  Wheleri, ii, 509
Abrus precatorius, i, 111, 165, 168
Acacia, i, 23, 62, 64, 110, 339; ii, 445
  acicularis, ii, 445
  alata, ii, 446
  armata, ii, 446
  biflora, ii, 446
  ciliata, ii, 447
  decipiens, ii, 446
  fasciculata, i, 95
  læta, i, 95
  marginata, ii, 446
  melanoxylon, ii, 445
  nigricans, ii, 447
  nilotica, i, 288
  pubescens, ii, 447
  pulchella, ii, 446
  Sophoræ, ii, 445
  sulcata, ii, 445
Acaciæ, i, 311
Acanthaceæ, i, 134, 380
Acanthus tetragonus, i, 94
Acer villosum, ii, 719
Aceras, ii, 475
  anthropophora, ii, 475
Achenopsis, ii, 684
Achyranthus papposa, ii, 543
Acicarpha, ii, 309, 312
  lanata, ii, 309
  spathulata, ii, 307
  tribuloides, ii, 309, 312
Acioa, i, 115
Acorum maritimum, ii, 536
Acrostichum, ii, 250
  alcicorne, i, 147, 165
  alpinum, ii, 254
  aureum, i, 147, 165, 169
  calomelanos, i, 473
  hyperboreum, ii, 254
  ilvense, ii, 254
  Stemaria, i, 147, 165
  velleum, i, 303
Actinophora, ii, 645
  fragrans, ii, 645
Actinotus, i, 29
Adansonia, i, 153
  digitata, i, 288
Adelanthus, ii, 652
Adelioides decumbens, ii, 708
Adenanthera, i, 22
Adenanthos, ii, 16, 20, 21, 36, 125
  cuneata, ii, 125
  obovata, ii, 125
  sericea, ii, 125
  terminalis, ii, 125
Adenophorus, ii, 566
Adiantum, i, 146
  Africanum, i, 148 *note*
  capillus-veneris, i, 148 *note*
  tenerum, i, 148 *note*
  truncatum, i, 83; ii, 446
Ægiceras, i, 150 *note*, 364, 380
Ægopricon, i, 127
Ærides, ii, 492
  odoratum, ii, 492
  paniculatum, ii, 689
Æschynanthus, ii, 585, 590, 594, 596
  acuminata, ii, 597
  bracteata, ii, 597
  fulgens, ii, 596
  Griffithii, ii, 596
  Horsfieldii, ii, 597
Æschynanthus longicaulis, ii, 597

Æschynanthus parasitica, ii, 596
  parvifolia, ii, 596
  radicans, ii, 596, 597
  ramosissima, ii, 596
  volubilis, ii, 596
  Wallichii, ii, 597
Æschynomene, ii, 444
  Americana, ii, 444
  aspera, ii, 444
  bispinosa, ii, 444
  hispida, ii, 444
  indica, ii, 445
  sensitiva, ii, 444
Ætheilema, i, 134
Æthionema, i, 271; ii, 376
  monospermum, ii, 376
  saxatile, ii, 376
Agalmyla, ii, 593, 594, 597
  staminea, ii, 598
Agaricus alneus, i, 70
  campestris, i, 70
  muscarius, i, 70
Agastachys, ii, 17, 37, 132
  odorata, ii, 132
Agathis, i, 47, 458, 461
Agaty, ii, 443
Ageratum conyzoides, i, 165, 167
Agoul, i, 295
Agrostis, i, 221
  algida, i, 177
  laxiflora, ii, 514
  paradoxa, i, 177, 222
  virginica, i, 58, 164, 166
Aikinia, ii, 581, 606
  Brunonis, ii, 554
  Horsfieldii, ii, 556
Aira, i, 232
  aquatica, ii, 514
  spicata, i, 231
  subspicata, i, 231; ii, 514
Akee, i, 161
Alchornea, i, 127, 164
Alcina, ii, 285
Alfonzia oleifera, i, 141
Alhagi Maurorum, i, 295
Alisma Plantago, i, 68
Allamanda, i, 532
Allium, ii, 550
  descendens, ii, 250
Allmania albida, ii, 534
  esculenta, ii, 534
  nodiflora, ii, 534
Aloe, i, 64
Alopecurus, i, 55
  alpinus, i, 67, 177, 219; ii, 514
Alopecurus antarcticus, i, 219
  aristulatus, ii, 514
  ovatus, i, 219
  pratensis, i, 219
Alsine rubella, i, 199
  stricta, i, 201
Alsodeia, i, 123
Alsodinæ, i, 123
Alstonia, ii, 233, 245
  costata, ii, 246
  scholaris, ii, 245
  spectabilis, ii, 246
  venenata, ii, 246
Alyssum, i, 266, 267 *note*, 271; ii, 386
  alpestre, ii, 387
  austriacum, ii, 386
  calycinum, i, 267 *note;* ii, 387
  campestre, i, 267 *note;* ii, 387
  clypeatum, ii, 389
  deltoideum, ii, 389
  densiflorum, i, 267 *note*
  Dioscoridis, ii, 389
  fulvescens, i, 267 *note*
  halimifolium, ii, 388
  hirsutum, i, 267 *note*
  incanum, ii, 389
  lunarioides, ii, 388
  maritimum, i, 266; ii, 388
  micropetalum, i, 267 *note*
  minimum, i, 267 *note;* ii, 388
  montanum, ii, 387
  mutabile, ii, 389
  rostratum, i, 267 *note*
  sativum, ii, 386
  saxatile, ii, 387
  sinuatum, ii, 390
  spinosum, ii, 388
  strictum, i, 267 *note*
  strigosum, i, 267 *note*
  umbellatum, i, 267 *note*
  utriculatum, ii, 389
Alyssineæ, i, 263
Alyxia, i, 37
Amaranthaceæ, i, 36; ii, 543, 545
Amaryllideæ, i, 51
Amaryllis, i, 364
Ambora, i, 25
Ambun Ambun, i, 393
Ambrosia, i, 31
Amellus, ii, 295, 296
Ammannia, ii, 535
  triflora, ii, 710
Ammobium, ii, 676
  alatum, ii, 677

Amomum granum Paradisi, i, 155
Ampelopsis, i, 151
Amphicome, ii, 588, 725
Amygdaleæ, i, 115
Amyrideæ, i, 112
Amyris Gileadensis, i, 94
    Kataf, i, 94
Anabathra, ii, 722
Anacardeæ, i, 112
Anacardium, i, 43, 112
Anadenia, ii, 37, 139, 280
    illicifolia, ii, 140
    pulchella, ii, 140
    trifida, ii, 140
Anagallis, i, 297
    cærulea, i, 297
Anagyris, ii, 421
    fœtida, i, 25 ; ii, 421
Anasser, i, 37, 132
Anastatica, ii, 376
    hierochuntica, ii, 376
    Syriaca, ii, 371
Anchusa affinis, i, 94
Ancistrocarpus, i, 139 *note*
Andromeda tetragona, i, 177, 213
Andropogon, i, 55, 57, 146
    acicularis, i, 302
Angianthus, ii, 283
    tomentosus, ii, 283
Angophora, i, 311
Angræcum, ii, 689, 694
Anictangium aquaticum, ii, 335
    ciliatum, i, 69
    Humboldtii, ii, 335
    pulvinatum, ii, 344
Anisomeles, i, 380 ; ii, 503
    malabarica, ii, 670
    ovata, ii, 503
Anisophyllæa, ii, 715
Anodontium, i, 348
Anona, i, 164
    Asiatica, i, 105
    hexapetala, ii, 685
    microcarpa, i, 162 *note*
    mucosa, i, 105
    muricata, i, 105
    myristica, i, 162 *note*
    obtusiflora, i, 105
    Senegalensis, i, 105, 153, 155
    uncinata, ii, 685
Anonaceæ, i, 37, 74, 105, 382 ; ii, 685
Anopterus, ii, 523
Antennaria, ii, 301
    alpina, i, 212
Anthemis apiifolia, ii, 690
    odorata, ii, 466
Anthenantia, i, 57
Anthericum, i, 50
    cirratum, ii, 676
    latifolium, ii, 676
Antherylium, i, 120
Anthistiria, i, 57
    australis, i, 43, 308, 309
Anthobolus, i, 42
Anthoceros punctatus, i, 69
Anthocleista, i, 133, 153
Anthospermum, i, 131
Anthoxanthum, i, 231 ; ii, 571
Antiaris, i, 78
    macrophylla, i, 78
    toxicaria, i, 79
Antidaphne, i, 413 *note*
Antidesma, i, 155 ; ii, 663
Antidesmeæ, ii, 663
Antirrhinum majus, i, 479
Antonia, ii, 577
Aotus, ii, 430
    ferruginea, ii, 430
    villosa, ii, 430
Aphanes arvensis, i, 68
Aphelandra, ii, 505
    cristata, ii, 505
Aphyteia, i, 388, 391, 396, 401, 461
    Hydnora, i, 416
    multiceps, i, 429
Aplodon, i, 240, 247
Apocineæ, i, 36, 37, 131, 133, 151, 295, 469 ; ii, 6, 22, 195, 551
Apocinum, ii, 233, 239
    androsæmifolium, ii, 239
    cannabinum, ii, 240
    cordatum, ii, 229
    frutescens, ii, 236
    hastatum, ii, 227
    hypericifolium, ii, 240
    lanceolatum, ii, 229
    lineare, ii, 228
    minutum, ii, 227
    pubescens, ii, 240
    Sibiricum, ii, 240
    triflorum, ii, 228
    Venetum, ii, 240
Apodantheæ, i, 429
Apodanthes, i, 424, 430
    Berterii, i, 430
    Blanchetii, i, 430
    Calliandra, i, 431
    Caseariæ, i, 430
Apostasia, i, 503, 560 ; ii, 547

Apostasia nuda, ii, 548, 551
    odorata, ii, 547, 551
    Wallichii, ii, 548, 551
Appendicula, ii, 575
Aquilaria, i, 126
Aquilarinæ, i, 126
Aquilegia, ii, 318
Aquilicia, i, 151
Arabis, i, 195, 271; ii, 395
    alpina, ii, 395
    arenosa, ii, 396
    bellidifolia, ii, 395
    cærulea, ii, 395
    Canadensis, i, 268; ii, 397
    ciliata, ii, 396
    falcata, ii, 397
    hirsuta, ii, 397
    hispida, ii, 396
    nudicaulis, i, 197
    nutans, ii, 395
    pendula, i, 268; ii, 397
    pumila, ii, 395
    stricta, ii, 396
    thaliana, ii, 396
    turrita, i, 268; ii, 397
    verna, ii, 395
Arachis, i, 24
    hypogæa, i, 154, 159
Araliaceæ, ii, 322
Araliæ, i, 29
Araucaria, i, 456
    excelsa, i, 48, 64; ii, 721
Arbor radulifera, i, 72
Arctotheca, ii, 465
    repens, ii, 465
Arctotis, ii, 298, 467
    acaulis, ii, 467
    angustifolia, ii, 468
    argentea, ii, 468
    aspera, ii, 469
    auriculata, ii, 469
    calendulacea, ii, 465
    crithmoides, ii, 466
    decumbens, ii, 468
    decurrens, ii, 468
    dentata, ii, 466
    fastuosa, ii, 469
    flaccida, ii, 468
    glaucophylla, ii, 467
    grandiflora, ii, 467
    hypochondriaca, ii, 465
    paleacea, ii, 466
    paradoxa, ii, 466
    plantaginea, ii, 468
    repens, ii, 465
Arctotis reptans, ii, 469
    rosea, ii, 468
    scariosa, ii, 466
    spinulosa, ii, 469
    tricolor, ii, 467
    undulata, ii, 467
Ardisia, i, 150 *note*
Areca, i, 51
Arenaria marina, i, 66, 68, 310
    quadrivalvis, i, 199
    Rossii, i, 200
Arethusa, i, 507, 538; ii, 486
    bulbosa, ii, 487
    divaricata, ii, 485
Aristida ramosa, i, 93
Aristolochia, i, 384; ii, 358, 534
    cordiflora, i, 385
    grandiflora, i, 385
Arnica angustifolia, i, 210
    fulgens, i, 211
    montana, i, 210
    plantaginea, i, 211
Aroideæ, i, 169, 298, 365, 381, 383
Arrhenatherum, i, 232
Artabotrys, ii, 685
    odoratissimus, ii, 685
Arthrochloa, i, 232
Arthropodium cirratum, ii, 676
    paniculatum, ii, 676
Artocarpeæ, i, 138
Arundo, i, 58
    Canadensis, ii, 514
    Phragmites, i, 43, 58, 68, 301
    stricta, ii, 514
Asarinæ, i, 384, 385, 392, 396, 401; ii, 358
Asclepiadeæ, i, 36, 37, 133, 134, 295, 466, 487, 513, 516, 545, 549; ii, 6, 195, 551
Asclepias, ii, 6, 216
    amœna, i, 524; ii, 216
    aphylla, ii, 226
    arborescens, ii, 217
    carnosa, ii, 209
    citrifolia, ii, 216
    cordata, ii, 226
    crispa, ii, 217
    curassavica, i, 519, 534; ii, 216
    Davurica, ii, 223
    decumbens, ii, 216
    elevata, ii, 216
    fruticosa, ii, 217
    gigantea, ii, 218
    grandiflora, ii, 217
    incarnata, ii, 216

Asclepias lacitfera, ii, 213
  laniflora, i, 94; ii, 218
  linaria, ii, 216
  Mexicana, ii, 216
  nigra, ii, 224
  nivea, ii, 216
  parviflora, ii, 216
  phytolaccoides, i, 528, 535, 549
  procera, ii, 218
  pubescens, ii, 217
  pulchra, ii, 216
  purpurascens, i, 524, 534, 535; ii, 216, 528
  rubra, ii, 216
  scandens, ii, 226
  setosa, ii, 217
  Sibirica, ii, 224
  stipitacea, ii, 226
  Syriaca, ii, 196, 216
  tuberosa, ii, 216
  undulata, ii, 217
  variegata, ii, 216
  verticillata, ii, 216
  viminalis, ii, 226
  Vincetoxicum, ii, 224
  volubilis, ii, 209
  vomitoria, ii, 220
Asparageæ, i, 50
Asperuleæ, i, 36
Asphodeleæ, i, 50, 52, 298, 433; ii, 278
Aspidium, ii, 546
  fragile, ii, 518
  fragrans, ii, 518
  trifoliatum, ii, 543
Asplenium, i, 59, 146; ii, 250
  Filix-fœmina, i, 60
Astelia, i, 50, 64
Astelma, ii, 691
  eximium, ii, 691
Astephanus, ii, 228
Aster argutus, ii, 711
  glutinosus, ii, 461
Asteranthos, i, 387 *note*, 388 *note*
Astragalus alpinus, i, 209
Astrantia, ii, 273
Astranthus, i, 120
Ataxia, i, 231; ii, 571
  Horsfieldii, ii, 571
Atherospermeæ, i, 25, 64
Athyrium fragile, ii, 518
Atlas tree, ii, 30
Atriplex Halimus, i, 66, 68
Attil, i, 288
Attyah, i, 112 *note*
Atylus, ii, 55, 58
Aubrietia, i, 271
Aulax, ii, 19, 21, 35, 39, 41
  pinifolia, ii, 39, 41
  umbellata, ii, 39, 40
Aurantiaceæ, ii, 537
Avena, i, 231
  arundinacea, i, 301
  Forskalii, i, 301
  striata, ii, 514
Avenaceæ, ii, 571
Averrhoa, i, 113
  Carambola, i, 114
Avicennia, i, 40, 364
Axyris Moorcroftiana, ii, 534
Azolla, i, 87
  pinnata, i, 87

Baccharis, ii, 293, 294
  nereifolia, ii, 294 *note*
  scoparia, ii, 306
Bæa, ii, 590, 595, 605
  Commersonii, ii, 605
  hygrometrica, ii, 605
  multiflora, ii, 605
  Wallichii, ii, 605
Bæckia, i, 19
  arbuscula, ii, 710
  camphorata, ii, 679
  pygmæa, ii, 710
Bæobotrys, i, 151 *note*, 293
Balanophora, i, 389, 391
  dioica, i, 392 *note*; ii, 534
  fungosa, i, 392 *note*
Balanophoreæ, i, 412
Balanites, i, 44
  Ægyptiaca, i, 287
Balbisia, ii, 283
  elongata, ii, 283
Balfouria, ii, 233, 241
Ballota disticha, ii, 503
Bambusa, i, 56
Bamia Abelmoschus, ii, 532
Banana, i, 156
Banisteria, i, 164
  Leona, i, 105
Banksia, i, 116, 308, 310, 450, 455; ii, 11, 15, 17, 19, 38
  æmula, ii, 177
  asplenifolia, ii, 176
  attenuata, ii, 176
  australis, ii, 174
  coccinea, ii, 175
  collina, ii, 172
  compar, ii, 175
  conchifera, ii, 177

Banksia dactyloides, ii, 22, 156
  dentata, ii, 177
  depressa, ii, 173
  elatior, ii, 177
  ericifolia, ii, 172
  gibbosa, ii, 152
  glauca, ii, 174
  grandis, ii, 178
  ilicifolia, ii, 178
  insularis, ii, 174
  integrifolia, ii, 12, 174
  latifolia, ii, 176
  littoralis, ii, 173
  marcescens, ii, 176
  marginata, ii, 173
  microstachya, ii, 173
  musculiformis, ii, 190
  nivea, ii, 181
  nutans, ii, 172
  oblongifolia, ii, 175
  occidentalis, ii, 172
  oleæfolia, ii, 156, 174
  paludosa, ii, 175
  patula, ii, 173
  pinifolia, ii, 152
  præmorsa, ii, 176
  pulchella, ii, 171
  pyriformis, ii, 159
  quercifolia, ii, 178
  repens, ii, 178
  robur, ii, 176
  salicifolia, ii, 176
  serrata, ii, 177
  serratifolia, ii, 177
  speciosa, ii, 13, 178
  sphærocarpa, ii, 171
  spicata, ii, 174
  spinulosa, ii, 172
  tenuifolia, ii, 152
  teretifolia, ii, 150
  verticillata, ii, 175
Baptisia, ii, 422
  alba, ii, 423
  australis, ii, 423
  perfoliata, ii, 423
Barbarea, ii, 398
  præcox, ii, 398
  tinctoria, ii, 423
  vulgaris, ii, 398
Barbula leucostoma, i, 238, 253
  ruralis, i, 239
  unguiculata, i, 69
Barleria brevispina, i, 94
  eranthemoides, i, 93
  grandiflora, i, 94
Barleria macracantha, i, 94
  mollis, i, 94
  parviflora, i, 94
Barraldeia, i, 119 *note*
  pomiformis, i, 69
Bartholina, ii, 478
Bartramia, ii, 335
  pectinata, ii, 478
Bassia, i, 296
  rufescens, i, 294
Basteria aculeata, ii, 463
Bauera, i, 20
Bauhinia, i, 25
Beaufortia, i, 19, 311 ; ii, 457
  decussata, ii, 457
  sparsa, ii, 457
Beckmannia erucæformis, ii, 515
Begonia, ii, 279 *note*
Begoniaceæ, i, 149
Belis, i, 461
Bellenda, i, 131 *note*
Bellendena, ii, 17, 18, 23, 37
Belviseæ, 1, 388 *note*
Belvisia, i, 387 and *note*, 388 *note*
Bennettia, ii, 661
  affinis, ii, 665
  Finlaysoni, ii, 665
  Jackiana, ii, 665
  javanica, ii, 661
  pedicellata, ii, 665
  phlebocarpa, ii, 665
  Wallichii, ii, 664
Bennettiaceæ, ii, 663
Berberideæ, i, 124 *note*, 381
Berberides, i, 65, 124, 361
Berberis, i, 124 *note*
Berckheya, ii, 462
  cernua, ii, 463
  ciliaris, ii, 462
  cynaroides, ii, 462
  incana, ii, 463
  obovata, ii, 463
  setosa, ii, 462
  squarrosa, ii, 462
Berteroa, i, 271
Besleriaceæ, ii, 586
Beslerieæ, ii, 590
Bidens arborea, ii, 292 *note*
  hirsuta, ii, 291
  nivea, ii, 290, 295
  scandens, ii, 290
Bignonia cærulea, ii, 674
  Copaia, ii, 674
  discolor, i, 94
  filicifolia, ii, 674

Bignonia procera, ii, 674
Bignoniaceæ, ii, 584
Billardiera, i, 13
Billottia, i, 311
  flexuosa, i, 311 *note*
  linearifolia, i, 311 *note*
  marginata, i, 311 *note*
Biscutella, i, 264; ii, 373
  apula, ii, 373
  auriculata, ii, 373
  coronopifolia, ii, 373
  lævigata, ii, 374
  sempervirens, ii, 374
Bixineæ, ii, 716
Blackwellia, i, 120
Bladhia, i, 150 *note*
Blechum, i, 164; ii, 506
  Brownei, ii, 506
Blennodia, i, 316
  canescens, i, 316
Blepharis, i, 135
Bletia, ii, 694
  capitata, ii, 488
  florida, ii, 487
  hyacinthina, ii, 487
  Tankervilliæ, i, 491, 498, 512; ii, 487
  verecunda, ii, 487
Blighia sapida, i, 161 *note*
Blumea diffusa, ii, 711
Bocconia, i, 270 *note;* ii, 271
  cordata, i, 270 *note;* ii, 271
  frutescens, i, 270 *note;* ii, 271
Bœomyces paschalis, i, 252
  vermicularis, i, 252
Boërhavia mutabilis, i, 164, 167
Boletus igniarius, i, 70
Bombaceæ, ii, 620
Bombax pentandrum, i, 109, 153, 166
Bonatea speciosa, i, 503, 537
Bontia, i, 40; ii, 506
  daphnoides, ii, 506
Boopideæ, ii, 312
Boopis, ii, 309, 312
  balsamitifolia, ii, 317
Boragineæ, i, 297; ii, 659
Boronia, i, 17
  affinis, ii, 709
  albiflora, ii, 709
Borrera aurantiaca, i, 250, 253
  flavicans, i, 250
Bossiæa, i, 25; ii, 437
  cinerea, ii, 438
  heterophylla, ii, 437
  lanceolata, ii, 438
  linophylla, ii, 438
Bossiæa microphylla, ii, 438
  prostrata, ii, 438
  rufa, ii, 437
  Scolopendrium, ii, 437
Botria, i, 151
Botrychium Lunaria, i, 67
Brabeium stellatum, ii, 16, 18, 36, 41, 137, 138
Brabyla, ii, 138
Bracheilema paniculatum, i, 95
Brachychilum, ii, 726
  Horsfieldii, ii, 726
Brachychiton, i, 315; ii, 637
  diversifolium, ii, 638
  incanum, ii, 638
  platanoides, ii, 638
  populneum, ii, 638
  ramiflorum, ii, 637
Brachylæna, ii, 294 *note*
Brachysema, ii, 427
  latifolium, ii, 427
  uniflorum, ii, 709
Brachystelma, ii, 675
  tuberosa, ii, 675
Brachystemum, ii, 503
  virginicum, ii, 504
Bragantia, i, 385
  Wallichii, ii, 534
Brassavola, ii, 495
  cucullata, ii, 495
Brassia, ii, 494
  maculata, ii, 494
Brassica, ii, 408, 494
  alpina, ii, 410
  arvensis, ii, 398
  campestris, ii, 410
  chinensis, ii, 409
  elongata, ii, 409
  Eruca, ii, 409
  Erucastrum, ii, 409
  monensis, ii, 409
  muralis, ii, 412
  Napus, ii, 408
  oleracea, ii, 408
  orientalis, ii, 404
  Rapa, ii, 408
Braya, i, 192, 193
Breweria evolvuloides, i, 94
Bridelia, i, 127
Bromelia Ananas, i, 154
Bromeliaceæ, i, 413 *note*
Bromus purgans, ii, 515
Brosimum, i, 79
Broughtonia, ii, 496
  sanguinea, ii, 496
Brucea, ii, 537

Brugmannsia, i, 402, 427, 558
  Zippelii, i, 427
Bruguiera, i, 20, 119, 364
Brunia, i, 64; ii, 322
  Levisanus, ii, 45
Bruniaceæ, ii, 322
Brunonia, i, 31; ii, 267 *note*, 269 *note*, 310, 357
  australis, ii, 310
  sericea, ii, 310
Bryum, i, 178; ii, 335
  argenteum, i, 69
  cæspititium, i, 237
  calophyllum, i, 235
  capillaceum, i, 238
  capillare, i, 69
  macrocarpum, i, 353, 354; ii, 335
  tenuifolium, 8, 238
  rostratum, i, 235
Buchanania, i, 112
Buchnera orobanchoides, i, 94
Bucklandia populnea, ii, 534
Buddlea acuminata, i, 93
  foliata, i, 93
Bulbocodium, i, 298
Bunias, ii, 372
  ægyptiaca, ii, 372
  balearica, ii, 375
  Cakile, ii, 369
  Erucago, ii, 372
  myagroides, ii, 408
  orientalis, ii, 372
  syriaca, ii, 371
Burchellia, ii, 687
  Capensis, ii, 687
Burmannia, i, 53
Bursaria, i, 13, 132
Bursera, i, 112
Burtonia, ii, 428
  scabra, ii, 428
Butomeæ, i, 379 *note*, 555
Butter and tallow tree, i, 161, 295
Buttneriaceæ, i, 11, 26, 63, 109; ii, 614, 646, 672
Buxbaumia, i, 348, 351; ii, 349
  aphylla, i, 351; ii, 350

Cabomba, i, 451
Cacalia abyssinica, i, 95
Cachio, i, 140 *note*
Cactus quadrangularis, i, 128
Cadaba dubia, i, 276
  farinosa, i, 276
Cænopteris, i, 59
Cæsalpineæ, i, 110, 116, 294
Cæsulia, ii, 274
  radicans, ii, 284
Cakile, i, 263; ii, 369
  maritima, ii, 369
  perennis, ii, 369
  rugosa, ii, 369
Caladenia, 485
  alba, ii, 485
Calamagrostis Canadensis, ii, 514
  purpurascens, ii, 514
  stricta, ii, 514
Calamus secundiflorus, i, 142
Calanchoë pubescens, i, 94
Calanthe, ii, 694
Caldasia, i, 389
Calea, ii, 287
  aculeata, ii, 303, 305, 306
  affinis, ii, 305
  Amellus, ii, 287, 290
  arcuata, ii, 306
  aspera, ii, 295, 306, 307
  aurea, ii, 305
  cordata, ii, 306
  cordifolia, ii, 287, 306
  denticulata, ii, 305
  Jamaicensis, ii, 287, 295, 299
  lævis, ii, 305
  leptophylla, ii, 300, 303, 304
  lobata, ii, 298
  longifolia, ii, 305
  oppositifolia, ii, 287, 290
  pinifolia, ii, 300, 302
  quinquefaria, ii, 306
  scoparia, 293, 306
  spectabilis, ii, 304, 306
Caleacte, ii, 289
  pinnatifida, ii, 289
  urticifolia, ii, 289
Caleana, ii, 486
Calectasia, i, 52, 84, 436
  cyanea, i, 85
Caleya, ii, 486
  major, ii, 486
Calicium claviculare, i, 69
Calladium, i, 365
Callistachys elliptica, ii, 426
Callistemon, i, 19
  rigidum, ii, 683
Callitriche, i, 22
Callitris, i, 48, 308, 339
  australis, ii, 706
  calcarata, ii, 706
  fruticosa, ii, 707
  glauca, ii, 706
  propinqua, ii, 706
  rhomboidea, ii, 707

- Callitris robusta, ii, 706
  - tuberculata, ii, 706
  - Ventenatii, ii, 706
  - verrucosa, ii, 706
- Calocephalus, ii, 286
- Calopogon, ii, 486
  - pulchellus, ii, 486
- Calosacme, ii, 599
- Calothamnus, i, 19, 311; ii, 456
  - gracilis, ii, 457
  - quadrifida, ii, 457
  - villosa, ii, 457
- Calothyrsus, ii, 147
- Calotis, ii, 688
  - cuneifolia, ii, 688
  - dentex, ii, 688
  - pterosperma, ii, 711
  - radicans, i, 190
- Calotropis, ii, 217
  - gigantea, ii, 218
  - procera, ii, 218
- Caltha arctica, i, 190
  - natans, i, 190
- Calvaria, i, 296
- Calycera, ii, 309
- Calycereæ, ii, 309, 312
- Calycomis, i, 20
- Calymperes, ii, 343, 345
- Calypso, ii, 488
  - Americana, ii, 489
  - borealis, ii, 489
- Calystegia sepium, i, 68, 296
- Calythrix, i, 311; ii, 683
  - decandra, ii, 710
  - glabra, ii, 684
  - laricina, ii, 710
- Camelina, ii, 386
  - austriaca, ii, 386
  - sativa, ii, 386
- Cameraria, ii, 247
- Campanula uniflora, i, 212
- Campanulaceæ, i, 31, 212; ii, 269 *note*
- Campulosus, i, 58
- Candollea, i, 12
  - fasciculata, ii, 704
  - pedunculata, ii, 704
- Canella, i, 381
- Canna Indica, i, 158
- Canneæ, i, 49; ii, 550
- Canscora diffusa, ii, 533
- Cantharellus lobatus, i, 253
- Canthium attenuatum, ii, 711
  - lucidum, i, 93
- Cappárideæ, i, 272, 282
- Capparis, i, 273
  - lasiantha, ii, 705
  - lucida, ii, 708
  - sodada, i, 279
  - trifoliata, i, 277
  - umbellata, ii, 705
- Capraria, ii, 504
  - biflora, ii, 504
- Caprifoliaceæ, ii, 324, 541, 673
- Caprifolium, ii, 541
- Capsella bursa-pastoris, i, 263, 271
- Capsicum, i, 155, 156, 158
  - frutescens, i, 158
- Carallia, i, 20, 119
- Caralluma, ii, 200, 208
  - adscendens, ii, 208
- Cardamine, ii, 392
  - Africana, ii, 393
  - amara, ii, 394
  - articulata, i, 197
  - asarifolia, ii, 393
  - bellidifolia, i, 198
  - bulbifera, ii, 393
  - chelidonia, ii, 393
  - enneaphylla, ii, 392
  - græca, ii, 393
  - hastulata, ii, 396
  - hirsuta, ii, 394
  - impatiens, ii, 394
  - latifolia, ii, 394
  - nivalis, ii, 397
  - nudicaulis, i, 197
  - pentaphylla, ii, 392
  - pinnata, ii, 392
  - pratensis, ii, 394
  - resedifolia, ii, 394
  - trifolia, ii, 393
- Cardiopterideæ, ii, 659
- Cardiopteris, ii, 655
  - Javanica, ii, 655
  - lobata, ii, 655
  - moluccana, ii, 655, 657
- Cardiospermum grandiflorum, i, 107, 165, 172
- Carduaceæ, ii, 270
- Carex, i, 53, 143, 145
  - affinis, ii, 516
  - ampullacea, ii, 517
  - aristata, ii, 517
  - attenuata, ii, 516
  - bicolor, ii, 516
  - bullata, ii, 517
  - cæspitosa, i, 68, 255
  - capillaris, ii, 517
  - compacta, i, 178; ii, 517

- Carex concinna, ii, 516
  - concolor, i, 218, 255
  - dioica, ii, 515
  - filifolia, ii, 516
  - fuliginosa, i, 218, 255; ii, 516
  - lacustris, ii, 517
  - limosa, ii, 517
  - loliacea, ii, 516
  - lupulina, ii, 517
  - marginata, ii, 517
  - media, ii, 516
  - misandra, i, 217, 255
  - mutica, ii, 517
  - oligocarpa, ii, 517
  - pellita, ii, 517
  - podocarpa, ii, 517
  - polytrichoides, ii, 516
  - pseudo-cyperus, i, 68
  - pulla, i, 178
  - remota, ii, 516
  - Richardsonii, ii, 516
  - saxatilis, ii, 517
  - scirpoidea, ii, 515
  - scoparia, ii, 516
  - varia, ii, 517
  - Wormskioldiana, ii, 515
- Cargillia australis, i, 162 *note*
- Carica papaya, i, 154, 158
- Carissa abyssinica, i, 94
  - edulis, i, 94
  - mitis, ii, 236
- Cartonema, i, 53
- Carmichælia, ii, 698
  - australis, ii, 698
- Carphephorus, ii, 299 *note*
- Carpodinus, ii, 715
- Carpolithus Smithiæ, ii, 723
- Cartodium, ii, 286
- Caryophylleæ, i, 65, 198, 285 ; ii, 587 *note*
- Cassa, i, 111, 153
- Cassava, i, 154, 155
- Cassia, i, 24, 153, 339
  - artemisiæfolia, i, 326
  - canaliculata, i, 326
  - circinata, i, 327
  - eremophila, i, 326
  - glaucescens, i, 326
  - linearis, i, 327
  - obovata, i, 294
  - occidentalis, i, 111, 163, 165, 167
  - phyllodinea, i, 326
  - platypoda, i, 326
  - pubescens, i, 94
- Cassia spectabilis, ii, 306
  - Sturtii, i, 325
  - zygophylla, i, 326
- Cassinia, ii, 304, 470
  - aculeata, ii, 306
  - aurea, ii, 283, 470
  - leptophylla, ii, 304
- Cassipourea, i, 164
- Casuarina, i, 45, 308, 339, 549
  - equisetifolia, i, 45
  - nodiflora, i, 45
  - quadrivalvis, i, 45
- Casuarineæ, i, 45
- Cassuviæ, i, 112
- Cassytha, i, 149
  - pubescens, i, 150, 165
- Catabrosa, i, 220, 228
- Catesbæa, ii, 268
- Catharinea glabrata, i, 234
  - lævigata, i, 234
- Caulinia oceanica, i, 68
  - ovalis, ii, 536
- Caulophyllum, i, 124 *note*
  - thalictroides, i, 361
- Causjera, ii, 536
- Ceanothus, i, 26
- Cecropia, i, 138
- Cedreleæ, i, 72, 149
- Celastrinæ, i, 114
- Celastrinea?, ii, 536
- Celastrineæ, i, 13, 27, 107
- Celastrus glaucus, i, 94
  - serrulatus, i, 94
- Celosia albida, i, 165
  - argentea, i, 165
  - margaritacea, i, 165
- Celtis, i, 138; ii, 279
  - orientalis, i, 165
- Cenarrhenes, ii, 37, 132
  - nitida, ii, 132
- Cenchrus, i, 57
  - tripsacoides, i, 93
- Cenomyce coccifera, i, 69
  - cornuta, i, 69
  - deformis, i, 69
  - fimbriata, i, 178
  - pyxidata, i, 69, 252
  - rangiferina, i, 6, 9, 178
  - vermicularis, i, 69, 252
- Centotheca lappacea, i, 165
- Centronia, ii, 595, 609
  - mirabilis, ii, 609
- Centrophorum, i, 302
- Centropodia, i, 302
- Cephaloteæ, ii, 357

Cephalotus, i, 76; ii, 353
    follicularis, i, 76, 440
Cerania vermicularis, i, 251
Ceranthera dentata, i, 123
Cerastium alpinum, i, 178, 198
    latifolium, i, 198
Ceratopetalum, i, 20, 120
Ceratophyllum, ii, 155
    compressum, ii, 152
    demersum, ii, 723
Ceratopteris, ii, 570
Cerbera, i, 133
Cercis, i, 24; ii, 436
    siliquastrum, i, 25; ii, 436
Ceropegia, i, 549; ii, 200, 205, 227, 696
    acuminata, ii, 205
    Africana, ii, 696
    biflora, ii, 205
    bulbosa, ii, 205
    Candelabrum, ii, 205
    juncea, ii, 205
    sagittata, ii, 228
    tenuiflora, ii, 228
    tuberosa, ii, 205
Cestrum, ii, 267
Ceterach alpinum, ii, 254
Cetraria cucullata, i, 251
    islandica, i, 178, 251
    juniperina, i, 250
    nivalis, i, 178, 250
    odontella, i, 251
Chailleteæ, i, 125
Chailletia, i, 125, 164
    sessiliflora, i, 126
Chailletiaceæ, ii, 535
Chamærops humilis, i, 52
Chamissoa albida, ii, 534
Chasme, ii, 40
Cheilanthes leptophylla, i, 95
Cheiranthus, ii, 404
    albus, ii, 405
    alpinus, ii, 403
    annuus, ii, 406
    Cheiri, i, 379 *note;* ii, 404
    coccineus, ii, 405
    erysimoides, ii, 403
    Farsetia, ii, 388
    fenestralis, ii, 406
    glabrus, ii, 406
    helveticus, ii, 404
    incanus, ii, 405
    littoreus, ii, 407
    longifolius, ii, 404
    maritimus, ii, 407
    mutabilis, ii, 404
Cheiranthus odoratissimus, ii, 406
    parviflorus, ii, 406
    quadrangulus, ii, 403
    sinuatus, ii, 406
    tenuifolius, ii, 404
    tricuspidatus, ii, 406
    tristis, ii, 406
Chenopodeæ, i, 138
Chenopodiacea, ii, 535
Chichæa aserifolia, ii, 628
Chilli, i, 158
Chiloglottis, ii, 549, 575
    serpyllifolia, ii, 575
Chilurus, ii, 129
Chionachne, ii, 573, 574
Chirita, ii, 585, 591, 594, 598
    acuminata, ii, 599
    bifolia, ii, 599
    cærulea, ii, 599
    dimidiata, ii, 599
    flava, ii, 599
    grandiflora, ii, 598
    hamosa, ii, 599
    Horsfieldii, ii, 599
    macrophylla, ii, 599
    pumila, ii, 599
    scaberrima, ii, 599
    urticifolia, ii, 598
Chlenaceæ, i, 11, 108, 109, 110
Chloanthes, i, 39
Chloranthеæ, i, 215
Chloranthus, ii, 671
    monostachys, ii, 671
Chondrachne, i, 145
Chorispermum, ii, 413, 705
    tenellum, ii, 413
Chorispora, ii, 705
Chorizandra, i, 145
Chorizema, ii, 425
    Henchmanii, ii, 699
    ilicifolia, ii, 425
    ilicifolium, ii, 425
    nana, ii, 425
    rhombea, ii, 425
    trilobatum, ii, 426
Chrysanthemum Indicum, ii, 691
Chrysobalaneæ, i, 115; ii, 537
Chrysobalanus, i, 115
    Icaco, i, 115, 153, 155, 167
Chrysocoma, ii, 293
    cinerea, ii, 302
Chrysosplenium alternifolium, i, 205
Chuquiraga, i, 81; ii, 269
Chuncoa, i, 20
Cichoraceæ, i, 30; ii, 263, 269

Cinclidotus, ii, 335
Cineraria congesta, i, 211, 255
    palustris, i, 211, 255
Cinarocephalæ, i, 30; ii, 298
Cissampelos, i, 381
    nymphææfolia, i, 95
Cissus, i, 151
    angustifolia, i, 394 *note*
Cistineæ, i, 65, 124, 282, 288, 453 and *note*, 532
Cistus, i, 453 *note*
Citrus aurantium, i, 154
    medica, i, 154
Cladium Mariscus, i, 68
Cladonia subuliformis, i, 252
Clarckia pulchella, i, 466
Clavaria coralloides, i, 70
    pistillaris, i, 70
Clavija, i, 151 *note*
Clematis aristata, ii, 703
    stenopetala, ii, 703
Cleome, ii, 413
    arabica, i, 273, 275; ii, 415
    arborea, i, 278
    Chelidonii, ii, 413
    deflexa, i, 276
    Erucago, ii, 414
    gigantea, ii, 414
    Houstoni, ii, 414
    monophylla, ii, 415
    ornithopodioides, ii, 414
    pentaphylla, i, 273; ii, 414
    procumbens, ii, 415
    Siliquaria, i, 94
    spinosa, ii, 414
    violacea, i, 276; ii, 414
    viridiflora, ii, 414
    viscosa, ii, 413
Clerodendron, i, 135; ii, 507
    fragrans, ii, 507
    inerme, ii, 508
    ligustrinum, ii, 508
    myricoides, i, 94
    paniculatum, ii, 507
    pyramidale, ii, 507
    Siphonanthus, ii, 508
    squamatum, ii, 507
    tomentosum, ii, 508
    viscosum, ii, 507
Clianthus Dampieri, i, 320, 330, 339
    Oxleyi, i, 320, 321
Clidanthera, i, 322
    psoralioides, i, 322
Cliffortia, i, 64
Clinopodium incanum, ii, 503
Clypeola, ii, 374
    Ionthlaspi, ii, 374
Cnestis, i, 112, 113, 294
Cochlearia, i, 271; ii, 383
    anglica, i, 178; ii, 383
    Armoracia, i, 379 *note;* ii, 384
    Coronopus, ii, 373
    danica, i, 178; ii, 383
    Draba, ii, 381
    fenestrata, i, 178, 191
    glastifolia, ii, 383
    officinalis, ii, 383
    saxatilis, ii, 384
Cocoa-nut, i, 158, 161
Cocoinæ, i, 141
Cocos indica, i, 141
Codarium acutifolium, i, 161
    nitidum, i, 161 *note*
Codia, i, 20
Cœlorachis, ii, 553
Coffea, ii, 269 *note*
Coix arundinacea, ii, 573
    heteroclita, ii, 574
Cola, i, 153; ii, 642
    acuminata, ii, 642
Colchicum fasciculare, i, 300
    Ritchii, i, 298
Coleanthus, i, 220
Collema fasciculare, i, 70
    nigrum, i, 70
    tremelloides, i, 70
Colletia, i, 26
Collomia, i, 549
Colpodium, i, 210, 221
    compressum, i, 221
    latifolium, i, 221, 255
    Stevenii, i, 221
Coluria, i, 206
Colutea, ii, 441
    aperta, ii, 441
    arborescens, ii, 441
    cruenta, ii, 441
    frutescens, ii, 442
    galegifolia, ii, 442
    herbacea, ii, 442
    Novæ Hollandiæ, i, 320
    perennans, ii, 443
    Pocockii, ii, 441
Combretaceæ, i, 19; ii, 663
Combretum molle, i, 94
    ovale, i, 94
Comesperma, i, 15
    aphyllum, ii, 708
    lanceolatum, ii, 708
Cometes, ii, 543

Cometes abyssinica, ii, 546
    alterniflora, ii, 545
    Surattensis, ii, 544
Commelina, i, 298, 299 *note;* 513
    acuminata, i, 93
    hirsuta, i, 93
Commelineæ, i, 53
Commersonia, i, 11; ii, 672
Compositæ, i, 30, 62, 65, 81, 104, 128, 210, 295, 308, 448; ii, 257, 571
Conchium, ii, 20, 149
    aciculare, ii, 152
    cornutum, ii, 152
    dactyloides, ii, 22, 157
    drupaceum, ii, 187
    ellipticum, ii, 157
    gibbosum, ii, 152
    longifolium, ii, 150
    nervosum, ii, 157
    oleifolium, ii, 155
    pugioniforme, ii, 150
    salicifolium, ii, 156
    salignum, ii, 156
    sphæroideum, ii, 152
    teretifolium, ii, 150
    trifurcatum, ii, 153
Conferva ebenea, i, 70
    ericetorum, i, 70
Coniferæ, i, 44, 46, 138, 312, 453, 506 *note*, 509; ii, 720, 721
Connaraceæ, i, 112
Connarus, i, 112, 294
Conocarpodendron, ii, 26, 40, 78, 380 *note*, 413 *note*
Conocarpus, i, 164; ii, 40
Conohoria, i, 123
Conospermum, i, 41, 82, 381; ii, 11, 15, 17, 18, 21, 37, 127
    cæruleum, ii, 129
    capitatum, ii, 129
    distichum, ii, 129
    ericifolium, ii, 128
    longifolium, ii, 128
    reticulatum, ii, 130
    taxifolium, ii, 128
    tenuifolium, ii, 128
    teretifolium, ii, 129
Contortæ, i, 384; ii, 269
Convolvulaceæ, i, 81, 104, 130, 168, 296; ii, 545
Convolvulus, i, 135; ii, 545
    Batatas, i, 161
    Brasiliensis, i, 164
    cirrhosus, i, 94
    congestus, i, 94
Convolvulus pes-capræ, i, 164
    pilosus, i, 94
    repens, i, 296
Conyza, ii, 294, 298
    bifrons, ii, 294
    squarrosa, ii, 294
Corallorrhiza, ii, 489
    innata, ii, 490
Corchorus, i, 108
    gracilis, i, 94
    Pumilio, ii, 709
Cordia abyssinica, i, 94
    ovalis, i, 94
Cordylocarpus lævigatus, ii, 408
Coreopsis tripteris, ii, 263, 297
Corethrum, i, 42
Cornicularia bicolor, i, 178
    lanata, i, 70, 251
    ochroleuca, i, 251
    pubescens, i, 70
    spadicea, i, 70
Cornulaca monacantha, i, 297
Cornus, ii, 322
Coronilla aculeata, ii, 443
    grandiflora, ii, 443
    Sesban, ii, 443
Coronopus, ii, 372
    didÿma, ii, 373
    Ruellii, ii, 373
Correa, i, 17
Corymbiferæ, i, 30; ii, 270
Corymbium, ii, 269
Corypha, i, 141, 161
    Taliera, i, 142
    umbraculifera, i, 142
Corysanthera, ii, 609
Corysanthes, i, 85
    fimbriata, i, 86
Costus, ii, 550
Coupea, i, 115
Courtenia, ii, 620, 641
    Afzelii, ii, 641
    heterophylla, ii, 641
    triloba, ii, 641
Coussapoa, i, 138
Crambe, ii, 369
    filiformis, ii, 371
    fruticosa, ii, 370
    hispanica, ii, 370
    maritima, ii, 370
    orientalis, ii, 370
    pinnatifida, ii, 370
    strigosa, ii, 371
    suecica, ii, 370
    tatarica, ii, 370

Craspedia, ii, 285
    uniflora, ii, 286
Crassula puberula, i, 94
Crassulaceæ, ii, 318, 356
Crateva, i, 273
    acuminata, i, 278
    Adansonii, i, 277
    fragrans, i, 277
    gynandra, i, 278
    læta, i, 277
    Roxburghii, i, 277
    Tapia, i, 278
Cream fruit, i, 153, 155
Cremolobeæ, i, 264
Cremolobus, i, 264
Crinum, i, 364
Crossandra, ii, 505
    undulæfolia, ii, 505
Crotalaria axillaris, i, 165
    Cunninghamii, i, 320
    farcta, i, 95
    trifoliastrum, ii, 533
    propinqua, i, 95
    Saltiana, i, 95
    Sturtii, i, 319, 325
Croton acuminatum, i, 95
Crowea dentata, ii, 709
Cruciferæ, i, 65, 182 *note*, 186, 261, 282, 294, 503, 559; ii, 271, 367
Cryphiospermum, ii, 284
    repens, ii, 284
Cryptandra, i, 26
    pyramidalis, ii, 708
Cryptarrhena, ii, 683
    lunata, ii, 683
Cryptodon. i, 247
Cryptogramma, ii, 525
    acrostichoides, ii, 519, 525
Cryptolepis, ii, 233, 240, 687
Cryptostegia, ii, 686
    grandiflora, ii, 686
Cryptostemma, ii, 465
    calendulaceum, ii, 465
    hypochondriacum, ii, 465
    runcinatum, ii, 465
Cucifera, i, 141
Cucurbita Pepo, i, 154
Cucurbitaceæ, i, 121, 384, 388, 444
Culhamia, ii, 616
Cullumia, ii, 462
    ciliaris, ii, 462
    setosa, ii, 462
    squarrosa, ii, 462
Cunninghamia, i, 458; ii, 707
Cunonia, i, 20
Cunoniaceæ, i, 20, 21, 120; ii, 523
Cuphea, ii, 238
Cupressinæ, i, 458
Curatella, i, 12
Curculigo, i, 51
Cusparia, i, 16
Cyanorchis, ii, 694
Cyathea, ii, 546
Cycadeæ, i, 149
Cycadites. ii, 380 *note*, 453, 717
    microphyllus, ii, 719
    Saxbyanus, ii, 724
Cycadoidea, ii, 716, 717
    megalophylla, ii, 717
    microphylla, ii, 717
Cycas, i, 458; ii, 717
Cyclophorus, ii, 566, 568
Cyclopia, ii, 422
    genistoides, ii, 422
Cyclopteræ, ii, 11, 20, 148
Cylindria, ii, 190
Cymbidium, i, 50; ii, 493
    aculcatum, ii, 694
    aloefolium, ii, 493
    Andersonii, ii, 495
    coccineum, ii, 490
    Corallorhizon, ii, 490
    cucullatum, ii, 495
    ensifolium, ii, 493
    floridum, ii, 487
    giganteum, ii, 694
    hyacinthinum, ii, 488
    lineare, ii, 490
    pedicellatum, ii, 694
    præmorsum, ii, 493
    proliferum, ii, 490
    pulchellum, ii, 486
    sinense, ii, 493
    tesselatum, ii, 689
    tripterum, ii, 494
    triquetrum, ii, 495
    verecundum, ii, 487
Cynanchum, ii, 6, 221
    acutum, ii, 221
    bicolor, ii, 226
    Capense, ii, 223
    Carolinense, ii, 215
    Chinense, ii, 221
    crassifolium, ii, 223
    crispiflorum, ii, 215
    erectum, ii, 212
    erubescens, ii, 222
    extensum, ii, 226
    floribundum, ii, 222

Cynanchum grandiflorum, ii, 215
  hirtum, ii, 215
  maritimum, ii, 215
  medium, ii, 224
  Monspeliacum, ii, 221
  nigrum, i, 215, 224, 529
  obliquum, ii, 215
  obtusifolium, ii, 223
  parviflorum, ii, 227
  pauciflorum, ii, 222
  pedunculatum, ii, 222
  pilosum, ii, 223
  planiflorum, ii, 215
  prostratum, ii, 215
  pyrotechnicum, ii, 226
  racemosum, ii, 215
  roseum, ii, 223
  rostratum, ii, 215
  Sibiricum, ii, 224
  suberosum, ii, 215
  undulatum, ii, 215
  viminale, ii, 226
  Vincetoxicum, ii, 224
Cynodon Dactylon, i, 65, 68
Cynodontium capillaceum, i, 238
Cynomorium, i, 389, 391
  cayanense, i, 389 *note*
  coccineum, i, 412
  jamaicense, i, 389 *note*
Cynontodium capillaceum, i, 69, 238
Cynosurus erucæformis, ii, 515
Cyperaceæ, i, 53, 54, 62, 85, 104, 142, 217, 298, 300
Cyperus, i, 143, 300
  articulatus, i, 144, 162, 164, 166
  densus, i, 93
  involutus, i, 93
  laxiflorus, i, 144
  laxus, i, 93
  ligularis, i, 144, 165
  melanocephalus, i, 93
  niloticus, i, 164
  Papyrus, i, 143, 162, 166, 300
  rotundus, i, 66, 68
  scirpoides, i, 93
Cyphia, i, 32, 34
Cypripedium, i, 48, 503 ; ii, 489, 549, 551
  acaule, ii, 499
  album, ii, 499
  arietinum, ii, 499
  Calceolus, ii, 498
  flavescens, ii, 499
  humile, ii, 499
  parviflorum, ii, 498
Cypripedium pubescens, ii, 498
  spectabile, i, 508 ; ii, 499
Cyrtandra, i, 558 ; ii, 585, 596, 609
  C? lanuginosa, ii, 534
Cyrtandraceæ, i, 558 ; ii, 537, 577, 584
Cyrtandreæ, ii, 585, 590
Cyrtodon, i, 241
Cyrtolobus, ii, 533
Cyrtopodium, ii, 495, 567, 670
  Andersonii, ii, 495, 670
  Woodfordii, ii, 670
Cytineæ, i, 428 ; ii, 358
Cytinus, i, 385, 389, 391, 396, 401, 428
  americanus, i, 429
  dioicus, i, 429
  Hypocistis, i, 428
Cytisus Cajan, i, 154, 159

Dacrydium, i, 44, 47, 455, 458, 460
Dahlia, ii, 321
Dalechampia, ii, 544
  tripartita, i, 95
Dammara, i, 458
Dampiera, i, 315 ; ii, 271
Danais, i, 131
Danthonia, i, 301
  Forskalii, i, 301
Dasypogon, i, 52, 83, 436
  bromeliifolius, i, 84
Datisca, i, 285
Datisceæ, i, 285
Datura, ii, 267
Daviesia, ii, 435
  concinna, ii, 709
  corymbosa, ii, 435
  denudata, ii, 429
  latifolia, ii, 435
  mimosoides, ii, 435
  teretifolia, ii, 709
  ulicifolia, ii, 435
  ulicina, ii, 435
Dawsonia, i, 348 ; ii, 331, 335, 340
  polytrichoides, i, 349
Deidamia, i, 386, 387 *note*
Delabechia, i, 315
Dendrobium, i, 49 ; ii, 492
  Barringtoniæ, ii, 493
  cucullatum, ii, 692
  graminifolium, ii, 492
  linguiforme, ii, 492
  moniliforme, i, 49
  Pierardi, ii, 692
  ruscifolium, ii, 491
  sanguineum, ii, 496
  speciosum, ii, 492

Dentaria, ii, 392
  bulbifera, ii, 393
  enneaphylla, ii, 392
  heptaphyllos, ii, 393
  pentaphylla, ii, 392
  pinnata, ii, 393
Deschampsia, i, 221, 228, 231
  brevifolia, i, 230
Desmochæta, ii, 543, 544
  lappacea, i, 165, 167
  staminea, ii, 532
Deutzia, ii, 550
  corymbosa, ii, 532
Diacalpe, ii, 546
Dianella, i, 50
Dianthus, i, 285
  abyssinicus, i, 94
Diaspasis, i, 32
Dichapetalum, i, 125
Dicksonia antarctica, i, 59
Dicoryphe, ii, 321
Dicranun, ii, 345
  falcifolium, ii, 335
  flexuosum, i, 69
  pulvinatum, i, 69
  purpureum, i, 69
  scoparium, i, 69, 178
Dictamnus, i, 16
Didelta, ii, 463
  carnosum, ii, 463
  tetragoniæfolium, ii, 463
  spinosum, ii, 463
Didymocarpus, i, 532, 585, 590, 594, 599
  acuminata, ii, 602
  aromatica, ii, 601, 602
  barbata, ii, 599
  corchorifolia, ii, 603
  cordata, ii, 603
  corniculata, ii, 613
  crinita, ii, 602
  elongata, ii, 603
  frutescens, ii, 603
  hamosa, ii, 599
  helicteroides, ii, 605
  lanuginosa, ii, 603
  macrophylla, ii, 602
  missionis, ii, 603
  multiflora, ii, 605
  oblonga, ii, 601
  obtusa, ii, 602
  pedicellata, ii, 602
  plicata, ii, 602
  primulifolia, ii, 601
  Punduana, ii, 601
Didymocarpus racemosa, ii, 603
  reptans, ii, 603
  Rexii, ii, 604
  Rottleriana, ii, 603
  serrata, ii, 603
  subalternans, ii, 602
  verticillata, ii, 601
  villosa, ii, 601
  Zeylanica, ii, 603
Didymochlæna, ii, 569
Didymodon, ii, 348
  capillaceum, i, 238
  latifolium, ii, 348
  subulatum, i, 238
Diervilla, ii, 541
Digera, ii, 543
Dillenia, i, 12, 381
Dilleniaceæ, i, 12, 63, 64, 293
Dillwynia, ii, 430
  cinerascens, ii, 673
  ericifolia, ii, 431
  floribunda, ii, 430
  glaberrima, ii, 431
  myrtifolia, ii, 431
  obovata, ii, 431
  parvifolia, ii, 669
Diomedea, ii, 297 *note*
Dioscorea, i, 154, 160; ii, 655, 657
Diosmeæ, i, 16, 63, 72, 114, 285
Diphylleia, i, 124 *note*
Diplachne Baueri, ii, 707
Diplacrum, i, 54, 145
Diplanthera, ii, 531
Diplasia, i, 145
Diplazium, i, 60
Diplolæna, i, 17
Diplolepis, ii, 219
Diplomeris, i, 504
Dipodium, ii, 694
Dipsaceæ, i, 65; ii, 277, 309
Dipsacus, ii, 277
Dipteris, ii, 562, 566
  conjugata, ii, 562
Disa, ii, 480, 694
  cornuta, ii, 480
  spathulata, ii, 480
Dischidia, ii, 213, 357
Ditassa, ii, 225
Diuris, ii, 482, 549
  aurea, ii, 483
Dobera glabra, i, 93
Dœmia, i, 295; ii, 225
Dombeya Erythroxylon, ii, 509
Donia, i, 177, 321; ii, 282, 461
  glutinosa, ii, 461

Donia speciosa, i, 320
Doom, i, 141
Dorcoceras hygrometrica, ii, 605
Doronicum glutinosum, ii, 461
Doubah, i, 329
Doura, i, 289
Draba, i, 268, 271; ii, 384
  aizoides, ii, 385
  alpina, i, 190
  androsacea, i, 191
  ciliaris, ii, 385
  corymbosa, i, 178
  hirta, ii, 385
  incana, ii, 385
  lapponica, i, 191
  muralis, ii, 385
  muricella, i, 178
  nemoralis, ii, 385
  oblongata, i, 178
  pauciflora, i, 190, 253
  Pumilio, ii, 705
  pyrenaica, ii, 386
  rupestris, i, 178; ii, 384
  verna, ii, 384
Dracophyllum verticillatum, i, 38
Drapetes, i, 82, 83
Drepanophyllum, ii, 335
Drosera, i, 65
  Banksii, ii, 705
  petiolaris, ii, 705
  Menziesii, ii, 705
Droseraceæ, i, 282
Dryandra, i, 116, 450, 455; ii, 38, 179
  armata, ii, 180
  blechnifolia, ii, 182
  cuneata, ii, 180
  falcata, ii, 180
  floribunda, ii, 179
  formosa, ii, 180
  longifolia, ii, 181
  mucronulata, ii, 180
  nivea, ii, 181
  obtusa, ii, 181
  plumosa, ii, 181
  pteridifolia, ii, 182
  tenuifolia, ii, 182
Dryas integrifolia, i, 178, 206
  octopetala, i, 206
  pentapetala, i, 206
  tenella, i, 206
Drymis, ii, 704
Drynaria, ii, 566
Dufurea rugosa, i, 178
Dunalia acaulis, i, 94
Dupontia, i, 221, 228
  Fisheri, i, 229, 253
Dysodium, ii, 285

Ebenaceæ, i, 109
Echinops, ii, 274
  Ritro, ii, 263
Echites, ii, 232-4
  acuminata, ii, 234
  agglutinata, ii, 234
  annularis, ii, 234
  asperuginis, ii, 234
  biflora, ii, 234
  bispinosa, ii, 235
  circinalis, ii, 234
  corymbosa, ii, 235, 238
  costata, ii, 246
  Domingensis, ii, 234
  floribunda, ii, 235, 238
  glandulosa, ii, 235
  hirsuta, ii, 234
  laxa, ii, 234
  quinquangularis, ii, 234
  repens, ii, 234
  scholaris, ii, 246
  siphilitica, ii, 235
  spicata, ii, 235, 238
  suberecta, ii, 234
  succulenta, ii, 235
  torulosa, ii, 234
  umbellata, ii, 234
Eclipta, ii, 297 *note*
  sessilis, ii, 283
Edwardsia, ii, 419
  grandiflora, ii, 419
  microphylla, ii, 419
Ehretia abyssinica, i, 94
  obovata, i, 94
Ehrharta, i, 56
Elæagneæ, i, 65, 82
Elæis, i, 164
  guineensis, i, 140, 153, 154, 161
Elæodendrum, i, 107; ii, 538
Elate sylvestris, i, 142
Elatine, ii, 536
  Hydropiper, i, 65
Eleocharis capitata, i, 144, 164
  palustris, ii, 513
Eleusine brevifolia, ii, 533
  indica, i, 165
  E? stolonifer, i, 93
Elichrysum, ii, 692
Ellisia, ii, 519
Elymus canadensis, ii, 515
  mollis, ii, 515

Emba, i, 140 *note*
Embelia, i, 150 *note*
Embothrium, ii, 11, 13, 18, 19, 22, 38, 271
  buxifolium, ii, 146
  chaparro, ii, 187
  coccineum, ii, 165
  cytisoides, ii, 142
  dentatum, ii, 170
  emarginatum, ii, 13, 166
  ferrugineum, ii, 13, 169
  genianthum, ii, 146
  grandiflorum, ii, 166
  herbaceum, ii, 168
  hirsutum, ii, 170
  lanceolatum, ii, 165
  lineare, ii, 143
  linearifolium, ii, 143
  monospermum, ii, 162
  myricoides, ii, 169
  obliquum, ii, 170
  pinnatum, ii, 162
  salignum, ii, 155
  sericeum, ii, 142; β, ii, 142; γ, ii, 143
  silaifolium, ii, 168
  spathulatum, ii, 167
  speciosum, ii, 167
  speciosissimum, ii, 167
  strobilinum, ii, 187
  tinctorium, ii, 168, 169
  truncatum, ii, 167
  umbellatum, ii, 170
Empetrum nigrum, i, 178
Empleurum, i, 16
Encalypta, ii, 349
  vulgaris, i, 69
Endocarpum hepaticum, i, 69
Enhydra, ii, 284
Ensete, i, 157
Entelæa, ii, 677
  arborescens, ii, 678
Entelia ammannioides, ii, 710
Epacrideæ, i, 36, 38, 62, 63, 64, 308, 339, 380
Ephedra, i, 46, 453, 455, 457
Epiblema, ii, 549
Epidendrum, i, 49, 515; ii, 496
  aloifolium, ii, 493
  altissimum, ii, 474
  autumnale, i, 50
  Barringtoniæ, ii, 493
  ciliare, ii, 497
  cochleatum, ii, 496
  conopseum, i, 49; ii, 497
Epidendrum cucullatum, ii, 495
  elongatum, ii, 497
  ensifolium, ii, 493
  fragrans, ii, 496
  fuscatum, ii, 497
  humile, i, 49 *note*
  lineare, ii, 490
  nutans, ii, 497
  ophioglossoides, ii, 491
  præcox, i, 49 *note*
  præmorsum, ii, 494
  ruscifolium, ii, 491
  secundum, ii, 496
  sinense, ii, 493
  tripterum, ii, 493
  umbellatum, ii, 497
  undulatum, ii, 495
Epimedium, i, 124 *note*
Epipactis, i, 492, 542
  cordata, ii, 483
  ensifolia, ii, 484
  latifolia, ii, 484
  ovata, ii, 483
  pallens, ii, 484
  palustris, i, 528; ii, 484
  rubra, ii, 484
Epistephium, i, 501
Epithema, ii, 581, 586, 595, 606
Equisetaceæ, i, 65
Equisetum, i, 469
  arvense, ii, 517
  palustre, ii, 518
  scirpoides, ii, 518
  sylvaticum, ii, 518
  umbrosum, ii, 518
  variegatum, ii, 518
  virgatum, i, 474 *note*
Eragrostis ciliaris, i, 165
Erasma, ii, 322
Eremocharis, i, 322
Eremodendron Cunninghami, i, 332
Eremophila, i, 332, 339
  alternifolia, i, 332
  arborescens, i, 332
  Cunninghamii, i, 332
  Mitchelli, i, 333
  oppositifolia, i, 332
  Sturtii, i, 333
Ericeæ, i, 12, 65
Ericinæ, i, 213, 381
Erigeron, i, 329
Erinus frutescens, ii, 504
  verticillatus, ii, 505
Eriocaulon, i, 53
Eriocephalus, ii, 470

Eriocephalus africanus, ii, 470
    frutescens, ii, 470
    racemosus, ii, 470
Eriophorum angustifolium, i, 218 ; ii, 514
    capitatum, i, 218
    gracile, i, 218
    polystachyon, i, 177, 218
    strictum, ii, 514
    tenellum, ii, 514
    vaginatum, ii, 514
Eriostemon, i, 17
    parvifolius, ii, 709
Eriostylis, ii, 145
Ernodea, ii, 267
Erodendrum, ii, 15, 29, 60
    amplexicaule, ii, 77
    formosum, ii, 65
    tenax, ii, 72
    turbiniflorum, ii, 76
Erodium, i, 288
Eruca peregrina, ii, 390
Erucaria, ii, 408
    aleppica, ii, 408
Erysimum, ii, 402
    Alliaria, ii, 404
    angustifolium, ii, 405
    Barbarea, ii, 398
    bicorne, ii, 404
    cheiranthoides, ii, 402
    diffusum, ii, 403
    helveticum, ii, 403
    hieracifolium, ii, 404
    lanceolatum, ii, 403
    odoratum, ii, 404
    officinale, ii, 400
    orientale, ii, 404
    præcox, ii, 398
    repandum, ii, 403
    sessiliflorum, ii, 403
Erythræa compar, i, 94
Erythrina tomentosa, i, 95
Erythrophleum, i, 111, 290
Erythropsis, ii, 639
Erythrospermum, i, 121
Erythroxylon, i, 106
    ellipticum, ii, 709
Escalloneæ, ii, 523
Escallonia, ii, 523
Ethulia conyzoides, i, 162
Eucalyptus, i, 18, 62, 64, 74, 75, 311, 339
    Baxteri, ii, 710
    calophylla, i, 311
    ciliata, i, 240
    globulus, i, 18, 75
Eucalyptus grandifolia, ii, 710
    hypericifolia, ii, 710
    perfoliata, ii, 710
Euchilus, ii, 432
    obcordatus, ii, 432
Euclidium, ii, 371
    syriacum, ii, 371
Eudema, i, 254
Eudesmia, i, 74
    tetragona, i, 75
Eugenia, i, 364
Eulophia virens, ii, 534
Eulophus, ii, 694
Euodia, i, 16
Euonymus, i, 448, 537
Eupatorium, ii, 299 *note*
    ferrugineum, ii, 302
    rosmarinifolium, ii, 302
Euphorbia, i, 28, 62, 128; ii, 279
    propinqua, i, 95
    punicea, ii, 279 *note*
Euphorbiaceæ, i, 27, 28, 104, 127, 283, 559; ii, 587 *note*, 615, 659, 663
Eupomatia, i, 73, 382
    laurina, i, 73
Eurya, ii, 326
    Chinensis, ii, 327
    Japonica, ii, 328
Euryale, i, 451
Euryspermum, ii, 30, 40
    grandiflorum, ii, 47
    salicifolium, ii, 49
Eustegia, ii, 226
Eustrephus, i, 50
Eutaxia, ii, 431
    myrtifolia, ii, 431
Euthales, i, 33; ii, 266 *note*
Eutoca, ii, 519
    Franklinii, ii, 520
    parviflora, ii, 519
    Menziesii, ii, 519, 522
Eutrema, i, 193
    Edwardsii, i, 193, 254
Evernia prunastri, i, 69
Exocarpus, i, 42, 137, 308, 310
    cupressiformis, i, 43, 308, 310

Fagara, i, 16, 37, 133
Fagonia arabica, i, 285
    armata, i, 94
    cretica, i, 285
    Mysorensis, i, 286
    Oudneyi, i, 285
Farsetia, i, 262, 264, 265, 269 *note* ; ii, 388

Farsetia Ægyptiaca, i, 269 *note*
  cheiranthoides, ii, 388
  clypeata, ii, 389
  deltoidea, ii, 389
  incana, ii, 389
  lunarioides, ii, 388
  mutabilis, ii, 389
  stylosa, i, 269 *note*
Festuca brevifolia, i, 225, 256
  Halleri, i, 225
  ovina, i, 225 ; ii, 515
  vivipara, i, 225
Fibigia, i, 271
Ficus, i, 137
  Brassii, ii, 715
  religiosa, i, 137
Fieldia, ii, 609
  australis, ii, 609
Filices, i, 59, 62, 104, 146
Fimbristylis, i, 143, 300
Firmiana, ii, 639
  colorata, ii, 640
  platanifolia, ii, 639
Fissidens exilis, i, 69 ; ii, 344, 348
Fissilia, i, 136
  disparilis, i, 136
Flabellaria pinnata, i, 106
Flacourtianeæ, ii, 716
Flagellaria, i, 52
  indica, i, 165, 166, 169
Flindersia, i, 71
  australis, i, 71
Floerkea, ii, 363
Forstera, i, 34 ; ii, 312
Fothergilla, ii, 321
Francoaceæ, ii, 357
Franklandia, i, 79 ; ii, 15, 16, 18, 19,
    37 ; ii, 130
  fucifolia, i, 80 ; ii, 131
Fresiera, ii, 327
Frostia, i, 430
Fructus musculiformis, ii, 190
Fuchsia, i, 21
Fucus articulatus, i, 70
  corneus, i, 70
  obtusus, i, 70
  palmatus, i, 70
  pinnatifidus, i, 70
  plicatus, i, 70
  rubens, i, 70
  sinuosus, i, 70
Fuirena, i, 53
  umbellata, i, 144, 164, 169
Fumariaceæ, i, 65, 272
Funaria hygrometrica, i, 69, 346
Funaria minor, ii, 334
Fungi, i, 253
Fusanus, i, 42
  alternifolia, i, 93

Gærtnera, i, 37, 132
Gaguedi, i, 163 *note*
Galega astragaloides, ii, 709
  crocea, ii, 710
  juncea, ii, 709
  oblongata, ii, 709
  porrecta, ii, 709
  reticulata, ii, 710
Galipea, i, 16
Galium, i, 295
Gangi, i, 155
Garcinioides, ii, 537
Gardenia, i, 131, 269 *note*
  fucata, ii, 711
  suffruticosa, ii, 711
Gastrolobium, ii, 432
  bilobum, ii, 432
Gazania, ii, 464
  Pavonia, ii, 464
  rigens, ii, 464
  subulata, ii, 464
Geissorrhiza abyssinica, i, 93, 163
Geniostoma, i, 37, 132
Gentianeæ, i, 36, 37, 133, 295
Geodorum, ii, 488
  citrinum, ii, 488
  dilatatum, ii, 488
  purpureum, ii, 488
Geraniaceæ, i, 114, 288
Geranium compar, i, 95
Geropogon glabrum, ii, 270
Gesneriaceæ, ii, 586, 589
Gesnerieæ, ii, 589
Getonia, ii, 609
Geum, i, 206
  congesta, i, 206
  dilatata, i, 206
  glaciale, i, 206
  humilis, i, 206
  montanum, i, 206
  Peckii, i, 206
  radiatum, i, 206
  reptans, i, 206
  triflorum, i, 206
  urbanum, i, 65
Gisekia, i, 139
  pharnaceoides, i, 165, 172
Gleichenia, i, 59
  Hermanni, i, 146, 164
Glinus lotoides, i, 162, 165, 166

Globba, ii, 551
Globularia cordifolia, ii, 315
Globulariæ, i, 65
Gloriosa simplex, i, 170
    superba, i, 165, 169, 170
Glossanthus, ii, 577, 590, 595, 607
    grandifolia, ii, 607
    Malabarica, ii, 607
    Mexicana, ii, 581, 607
    Notoniana, ii, 607
    Zeylanica, ii, 607
Glossodia, ii, 485, 549
    major, ii, 485
Glyceria, i, 56, 226
    fluitans, i, 68
Glycine bimaculata, ii, 440
    coccinea, ii, 440
    rubicunda, ii, 440
    subterranea, i, 155, 160
Glycyrrhiza, i, 323
Glyphocarpa capensis, ii, 335
Gnaphalium, ii, 294, 300
    alpinum, i, 212; ii, 302
    carpaticum, ii, 302
    dioicum, ii, 302
    Leontopodioides, ii, 302
    Leontopodium, ii, 302
    luteo-album, ii, 300
    margaritaceum, ii, 301 *note*, 302
    mucronatum, ii, 302
    muricatum, ii, 302
    plantagineum, ii, 302
    seriphioides, ii, 302
    sylvaticum, ii, 300
    uliginosum, ii, 300
Gnaphaloideæ, i, 30
Gnetum, i, 453, 455
Gomeza, ii, 669
    recurva, ii, 669
Gomphocarpos, ii, 216
    arborescens, ii, 217
    crispus, ii, 217
    fruticosus, i, 542; ii, 217
    setosus, ii, 217
Gompholobium, ii, 427
    ellipticum, ii, 426
    fimbriatum, ii, 427
    latifolium, ii, 427
    maculatum, ii, 422
    marginatum, ii, 427
    polymorphum, ii, 427
    psoraliæfolium, ii, 427
    scabrum, ii, 428
    spinosum, ii, 429
    tomentosum, ii, 428
Gompholobium venustum, ii, 428
Gonocarpus, i, 22
Gonolobus, ii, 215
    Carolinensis, ii, 215
    crispiflorus, ii, 215
    grandiflorus, ii, 215
    hirtus, ii, 215
    maritimus, ii, 215
    niger, ii, 215
    obliquus, ii, 215
    planiflorus, ii, 215
    prostratus, ii, 215
    racemosus, ii, 215
    rostratus, ii, 215
    suberosus, ii, 215
    undulatus, ii, 215
Goodenia, ii, 267 *note*
    bellidifolia, ii, 267 *note*
    cycloptera, i, 331
    decurrens, ii, 267 *note*
Goodenoviæ, i, 31, 63, 81, 308; ii, 266, 271, 272, 310
Goodenovia littoralis, i, 34, 64
Goodia, ii, 439
    lotifolia, ii, 439
    pubescens, ii, 439
Goodyera, ii, 481
    pubescens, ii, 481
    repens, ii, 481
Gorteria, ii, 464
    araneosa, ii, 463
    asteroides, ii, 463
    cernua, ii, 463
    personata, ii, 464
    rigens, ii, 464
Gossypium, i, 317
Gouania, i, 26
Gramineæ, i, 54, 62, 85, 104, 145, 169, 182 *note*, 219, 298, 300, 468, 559; ii, 276, 587 *note*
Grammitis, ii, 525, 566
    Ceterach, i, 303
    leptophylla, ii, 526
Grangea maderaspatana, i, 162, 165, 167
Grangeria, i, 115
Gratiola involucrata, ii, 555
Grevillea, i, 41, 339; ii, 11, 18, 20, 22, 37, 140, 271, 280
    acuminata, ii, 145
    arenaria, ii, 144
    aspera, ii, 144
    aspleniifolia, ii, 147
    australis, ii, 143
    Banksii, ii, 147

Grevillea Baueri, ii, 145
  buxifolia, ii, 146
  ceratophylla, ii, 148
  Chrysodendron, ii, 16, 147
  cinerea, ii, 145
  concinna, ii, 144
  Dryandri, ii, 147
  dubia, ii, 142
  gibbosa, ii, 149
  Goodii, ii, 146
  heliosperma, ii, 148
  juncea, i, 335
  juniperina, ii, 143
  linearis, ii, 142
  lineata, i, 335
  longistyla, i, 335
  lorea, i, 335; ii, 149
  mimosoides, ii, 148
  Mitchellii, i, 335
  montana, ii, 144
  mucronulata, ii, 145
  neglecta, i, 335
  occidentalis, ii, 145
  parviflora, ii, 143
  pauciflora, ii, 144
  phylicoides, ii, 146
  polystachya, ii, 148
  pungens, ii, 147
  punicea, ii, 142
  refracta, ii, 148
  riparia, ii, 143
  sericea, ii, 142
  sphacelata, ii, 146
  striata, i, 335; ii, 148
  stricta, ii, 143
  Sturtii, i, 334
  tenuifolia, ii, 144
  venusta, ii, 146
Grewia, i, 108; ii, 534
Griffithia Daviesii, ii, 334
  parviflora, ii, 689
Grimmia, ii, 338, 344
  apocarpa, i, 69
  Daviesii, ii, 344
  pulvinata, i, 69
Grindelia, ii, 282
Grossularineæ, i, 65
Ground nuts, i, 154
Guevina, ii, 18, 36, 138
  Avellana, ii, 138
Guiera, i, 20
Guilandina, i, 294
  Bonduc, i, 111, 165, 168
  Bonducella, i, 165, 171
Guttiferæ, i, 149
Gwillimia, ii, 705
Gymnadenia, ii, 475
  conopsea, ii, 475
Gymnanthera, ii, 231
Gymnema, ii, 213
  lactifera, ii, 213
  sylvestris, ii, 214
Gymnocarpus decandrum, i, 297
Gymnogonia, i, 275
Gymnogramma, ii, 568
Gymnostomum, ii, 341, 354
  Bonplandii, ii, 344
  fasciculare, ii, 341, 344
  Griffithianum, ii, 341
  julaceum, ii, 345
  lapponicum, ii, 344
  microstomum, ii, 341, 344
  obtusifolium, i, 240, 253
  pennatum, ii, 344
  pulvinatum, ii, 344
  pyriforme, i, 69; ii, 339
  Rottleri, ii, 344
  viridissimum, ii, 344
Gymnostyles, ii, 281
  anthemifolia, ii, 282
  nasturtiifolia, ii, 282
Gynandropsis, i, 273, 275
Gynocardia, ii, 716
Gynocephalum, ii, 651
Gyratæ, ii, 525
Gyrinops, i, 126
Gyromium proboscideum, i, 250
Gyrophora erosa, i, 178, 250
  heteroidea β, i, 69
  hirsuta, i, 178, 250
  polyphylla, i, 69
  proboscidea, i, 69

Habenaria, ii, 476
  albida, ii, 477
  bifolia, i, 491, 500; ii, 477, 549
  bracteata, ii, 476
  ciliaris, ii, 477
  cristata, ii, 477
  fimbriata, ii, 477
  herbiola, ii, 477
  hyperborea, ii, 477
  nigra, ii, 476
  viridis, i, 540 *note;* ii, 476
Hakea, i, 310, 339; ii, 11, 15, 18, 22, 37, 187
  acicularis, ii, 152
  amplexicaulis, ii, 155

Hakea arborescens, ii, 157
  attenuata, ii, 154
  ceratophylla, ii, 155
  cinerea, ii, 156
  clavata, ii, 157
  cycloptera, ii, 153
  dactyloides, ii, 156
  elliptica, ii, 157
  epiglottis, ii, 150
  flexilis, ii, 151
  florida, ii, 154
  gibbosa, ii, 152
  glabra, ii, 150
  ilicifolia, ii, 154
  leucoptera, ii, 151
  linearis, ii, 154
  lissosperma, ii, 151
  lorea, i, 335
  marginata, ii, 156
  microcarpa, ii, 153
  nitida, ii, 154
  nodosa, ii, 151
  obliqua, ii, 151
  oleifolia, ii, 155
  prostrata, ii, 155
  pubescens, ii, 152
  pugioniformis, ii, 150
  pyriformis, ii, 159
  rugosa, ii, 150
  ruscifolia, ii, 156
  saligna, ii, 155
  sericea, ii, 152
  suaveolens, ii, 153
  sulcata, ii, 151
  trifurcata, ii, 153
  undulata, ii, 155
  varia, ii, 153
  vittata, ii, 152
Halorageæ, i, 21, 63
Haloragis, i, 21, 22
  lanceolata, ii, 710
  paniculata, ii, 710
  pusilla, ii, 710
  stricta, ii, 710
Hamamelideæ, i, 381; ii, 321, 334
Hamamelis, ii, 321
  Chinensis, ii, 322
  Virginica, ii, 323
Harrisonia, ii, 707
Hedwigia secunda, ii, 335
Hedychium elatum, ii, 690
  Horsfieldii, ii, 725
  speciosum, ii, 690
Hedyotis, i, 131, 295
  alata, ii, 532
Hedyotis alsinifolia, ii, 532
  approximata, ii, 532
  H.? arguta, ii, 532
  articularis, ii, 532
  biflora, ii, 532
  Burmanniana, ii, 532
  cephalophora, ii, 531
  congesta, ii, 531
  costata, ii, 532
  cymosa, ii, 532
  H.? elongata, ii, 532
  brachypoda, ii, 532
  extensa, ii, 532
  H.? glabra, ii, 531, 532
  Heynii, ii, 532
  linarifolia, ii, 532
  H.? macrocephala, ii, 531
  polycarpa, ii, 531
  puberula, ii, 532
  racemosa, ii, 532
  scandens, ii, 531
  scapigera, ii, 532
  stipulata, ii, 532
  stylosa, ii, 532
  tubularis, ii, 532
  vestita, ii, 531
  volubilis, ii, 531
Hedysarum adscendens, i, 165
  pictum, i, 165
  triflorum, i, 111, 165
  vaginale, i, 165
Heliantheæ, i, 128; ii, 297
Helianthemum, i, 453 *note*
Helianthus, ii, 266
  multiflorus, ii, 265
Helicia, ii, 532
  cochinchinensis, ii, 161
  robusta, ii, 532
Helictereæ, ii, 620
Helicteres apetala, ii, 628
  paniculata, ii, 632
  undulata, ii, 632
Heliophila, ii, 391
  amplexicaulis, ii, 391
  arabioides, ii, 391
  filiformis, ii, 391
  fœniculacea, ii, 392
  incana, ii, 391
  integrifolia, ii, 391
  pendula, ii, 392
  pilosa, ii, 391
  pinnata, ii, 392
  platisiliqua, ii, 391
Heliotropium cinereum, i, 94
  H.? dubium, i, 94

Heliotropium ellipticum, i, 94
    gracile, i, 94
    indicum, i, 165
Helosis guianensis, i, 124
Helvella membranacea, i, 253
Hemarthria, i, 58
Hemerocallideæ, i, 513
Hemidesmus, ii, 230
Hemigenia, i, 39
Hemionitis hastata, ii, 532
Hemistemma, i, 12
    angustifolium, ii, 703
    Banksii, ii, 703
    dealbatum, ii, 703
Hepaticæ, i, 66, 249
Heritiera, ii, 615, 643
    attenuata, ii, 643
    Fomes, ii, 643
    littoralis, ii, 643
    minor, ii, 643
Hermannia, i, 63
Hermanniaceæ, i, 109
Herminium, ii, 476
    Monorchis, ii, 476
Hermodactylum, i, 300
Hernandia, ii, 651
Hernandiaceæ, ii, 651
Hesperideæ, i, 72, 149
Hesperis africana, ii, 407
    inodora, ii, 408
    matronalis, ii, 408
    nitens, i, 272; ii, 407
    ramosissima, i, 272
    tristis, ii, 407
    verna, ii, 396
Heuchera, ii, 522
    Richardsonii, ii, 523
Hexameria, ii, 575
    disticha, ii, 575
Hibbertia, i, 12
    cistifolia, ii, 704
    dentata, ii, 704
    diffusa, ii, 704
    echiifolia, ii, 708
    fasciculata, ii, 704
    lepidota, ii, 704
    linearis, ii, 704
    monogyna, ii, 704
    oblongata, ii, 704
    pedunculata, ii, 704
    saligna, ii, 704
    scabra, ii, 708
    serpyllifolia, ii, 704
    stricta, ii, 708
    tomentosa, ii, 704
Hibbertia vetulina, ii, 708
    virgata, ii, 704
    volubilis, i, 449
Hibiscus, i, 109
    erianthus, i, 95
    parvifolius, i, 95
    surattensis, i, 165
    thespesioides, ii, 709
    tiliaceus, i, 165, 171
Hierochloë, i, 231; ii, 571
    alpina, i, 178, 232
    fragrans, ii, 514
    laxa, ii, 533
    pauciflora, i, 232
Hildegardia, ii, 639
    populifolia, ii, 639
Hingstha, ii, 284
Hippia minuta, ii, 281
    stolonifera, ii, 282
Hippocratea, i, 107
Hippocraticea?, ii, 537
Hippocraticeæ, i, 27, 107
Hippuris, i, 21, 22
Hiræa pinnata, i, 106
Hirculus propinquus, i, 202
Hirtella, i, 115
Holarrhena, ii, 232, 236, 244
Holcus, i, 57, 232
    acicularis, i, 302
    alpinus, i, 178, 232; ii, 514
    Gryllus, i, 66, 68
    saccharatus, i, 160
    sorghum, i, 160
Holostemma, ii, 220
Homalinæ, i, 120, 384, 386
Homalium, i, 120
Hookeria, ii, 337
    lucens, i, 69
Hordeum jubatum, ii, 515
Hoslundia, i, 135
Hostea, ii, 215
Hovea, i, 25; ii, 439
    linearis, ii, 440
    longifolia, ii, 440
Hovenia, i, 26
Hoya, ii, 200, 208, 716
    australis, ii, 715
    carnosa, i, 527, 529; ii, 209, 715
    Nicobarica, ii, 716
    viridiflora, ii, 209
Hudsonia, i, 453 *note*
Huernia, ii, 200, 205
    campanulata, ii, 206
    guttata, ii, 206

- Huernia venusta, ii, 206
- Humboldtia, ii, 552
  - laurifolia, ii, 552
- Hutchinsia, i, 263; ii, 378
  - alpina, i, 263; ii, 378
  - petræa, i, 263; ii, 378
  - rotundifolia, ii, 378
- Hybanthus, i, 122
- Hydnocarpus, ii, 716
- Hydnora, i, 401, 427, 558
  - africana, i, 402, 412, 416, 427
  - americana, i, 428
  - triceps, i, 412, 428
- Hydnoreæ, i, 427
- Hydrocotyle alata, ii, 706
  - asiatica, i, 165
  - flaccida, ii, 706
  - heteromeria, ii, 706
  - hirta, ii, 705
  - intertexta, ii, 706
  - muscosa, ii, 706
  - peduncularis, ii, 706
  - plebeia, ii, 706
  - pulchella, ii, 706
  - pusilla, ii, 706
  - tripartita, ii, 706
  - vulgaris, i, 68
- Hydrolea, i, 135
- Hydroleæ, i, 135
- Hydropeltideæ, i, 556
- Hydropeltis, i, 74, 451
- Hydrophylleæ, ii, 519
- Hydrophyllum, ii, 519
  - lineare, ii, 519
- Hymenanthera, i, 125
  - angustifolia, ii, 705
  - dentata, ii, 705
- Hymenopappus, ii, 265, 267 *note*, 268 *note*
  - scabiosæus, ii, 265
  - tenuifolius, ii, 266
- Hymenophyllum, i, 146; ii, 342
  - alatum, ii, 510
  - tunbridgense, i, 68
- Hypælyptum argenteum, i, 144, 164
- Hypælytrum, i, 144
- Hyphæne, i, 141
  - coriacea, i, 141
- Hypnum, ii, 345
  - aduncum, i, 178, 235
  - cordifolium, i, 234
  - nitens, i, 234
  - recognitum, i, 68
  - rufescens, i, 235
  - velutinum, i, 346
- Hypoderris, ii, 543
- Hypœlyptum, i, 54
- Hypoestes, i, 134
  - Forskalii, i, 93
- Hypophyllocarpodendron, ii, 25, 86
- Hypoxideæ, i, 51
- Hypoxis, i, 51
  - fascicularis, i, 298
- Hyptis, i, 135, 164
  - obtusifolia, i, 165, 167

- Iberis, i, 265; ii, 379
  - amara, ii, 380
  - ciliata, ii, 379
  - gibraltarica, ii, 379
  - linifolia, ii, 380
  - nudicaulis, ii, 378
  - pinnata, ii, 380
  - rotundifolia, ii, 378
  - saxatilis, ii, 379
  - semperflorens, ii, 379
  - sempervirens, ii, 379
  - umbellata, ii, 379
  - violacea, ii, 380
- Ibettsonia, ii, 422
  - genistoides, ii, 422
- Ichnocarpus, ii, 232, 235
- Ilex Japonica, i, 124 *note*
- Illecebreæ, i, 138; ii, 543
- Illicium, ii, 704
- Impatiens, ii, 535
  - tenella, i, 94
- Imperata aurundinacea, i, 68
  - cylindrica, i, 165
- Incarvillea, ii, 725
  - oblongifolia, ii, 599
  - parasitica, ii, 585
- Indigofera, i, 295
  - albicans, i, 95
  - diffusa, i, 95
  - lateritia, i, 165
- Incumba, i, 155
- Inga biglobosa, i, 288
  - Senegalensis, i, 289
- Inocarpus, ii, 651
- Inula, ii, 294
- Iodes, ii, 650
  - ovalis, ii, 650
- Ionidium, i, 122 *note*
  - aquatica, i, 296
  - Clappertoni, i, 296
  - pentaphylla, i, 164
  - pes-capræ, i, 164
- Ipomœa, i, 135, 296; ii, 545
- Ipomopsis, i, 532

- Irideæ, i, 54, 56, 64, 502, 513, 559
- Iris, i, 298, 559
- Isachne, i, 57
- Isatis, i, 270 *note;* ii, 271, 375
  - aleppica, ii, 375
  - lusitanica, ii, 375
  - orientalis, ii, 375
  - tinctoria, ii, 375
- Ischæmum, i, 57
  - rottböllioides, ii, 553
- Isocarpha, ii, 289
- Isochilus, ii, 490
  - linearis, ii, 490
  - prolifer, ii, 490
- Isolepis fluitans, i, 68
  - setacea, i, 68
- Isonema, ii, 232, 236
- Isopogon, i, 310; ii, 11, 14, 16, 17, 35, 58, 185
  - anemonifolius, ii, 59, 185
  - anethifolius, ii, 58, 185
  - attenuatus, ii, 60
  - axillaris, ii, 60
  - buxifolius, ii, 60
  - ceratophyllus, ii, 59
  - cuneatus, ii, 59
  - formosus, ii, 58
  - longifolius, ii, 59
  - polycephalus, ii, 60
  - teretifolius, ii, 58
  - trilobus, ii, 59
- Iva frutescens, ii, 266 *note*
- Ivira, ii, 615, 616
  - pruriens, ii, 629
- Ixodia, ii, 461
  - achillæoides, ii, 461
- Ixora, ii, 269 *note*
  - ? arguta, ii, 533
  - concinna, ii, 533
  - coriacea, ii, 533
  - densa, ii, 533
  - diversifolia, ii, 533
  - elliptica, ii, 533
  - grandifolia, ii, 533
  - lucida, ii, 533
  - macrophylla, ii, 533
  - nigricans, ii, 533
  - oblonga, ii, 533
  - opaca, ii, 533
  - propinqua, ii, 533
  - triflora, ii, 711

- Jacaranda, ii, 673
  - acutifolia, ii, 674
  - bahamensis, ii, 674
- Jacaranda caroliniana, ii, 674
  - obtusifolia, ii, 674
  - ovalifolia, ii, 674
  - procera, ii, 674
  - rhombifolia, ii, 674
  - tomentosa, ii, 675
- Jacksonia, ii, 428
  - scoparia, ii, 429
  - spinosa, ii, 429
- Jacquinia, i, 151 *note*
- Jamaica nutmeg, i, 161
- Jambolifera, i, 16
- Jasminum abyssinicum, i, 93
  - lineare, i, 330, 339
  - micranthum, i, 331
  - Mitchellii, i, 330
- Jasione, ii, 314
- Jatropha Manihot, i, 154
- Jeffersonia, i, 124 *note*
- Jenkinsia, ii, 652, 653
- Josephia, ii, 11, 19
- Junceæ, i, 52, 53, 216, 299 *note,* 436; ii, 278
- Juncus, i, 298
  - affinis, ii, 515
  - arcuatus, i, 217
  - biçornis, ii, 515
  - biglumis, i, 216
  - campestris, i, 217; ii, 515
  - castaneus, ii, 515
  - echinatus, ii, 515
  - effusus, i, 68
  - filiformis, ii, 515
  - glaucus, ii, 515
  - maritimus, i, 68
  - melanocarpus, ii, 515
  - tenuis, ii, 515
  - triglumis, ii, 515
- Jungermannia, i, 178; ii, 351
  - bicornis, i, 249
  - bidentata, i, 69
  - byssacea, i, 69
  - complanata, i, 69
  - furcata, i, 69
  - minuta, i, 249
  - pinguis, i, 69
  - tamarisci, i, 69
  - tomentella, i, 69
  - ventricosa, i, 249
- Jussiæa arborea, ii, 505
  - bivalvis, i, 93
  - cristata, ii, 505
  - cynanchifolia, i, 93
  - erecta, i, 165, 167, 171
  - Forskalii, i, 93

Jussiæa infundibuliformis, ii, 505
  pulcherrima, ii, 505
  tetragona, ii, 505

Kadsura, ii, 685
Kallstrœmia, i, 318
Kanahia, ii, 218
  laniflora, i, 94; ii, 218
Kangaroo grass, i, 308
Kantuffa, i, 94
Kasheia, i, 303
Kennedia, i, 25; ii, 440
  coccinea, ii, 440
  monophylla, ii, 440
  prostrata, ii, 440
  rubicunda, ii, 440
  speciosa, i, 321
Kernera, i, 271
Kingia, i, 433, 436
  australis, i, 308, 436; ii, 724
Kino gum, i, 290
Klugia azurea, ii, 607
Knightia, ii, 12, 38, 163
Knoxia mollis, ii, 531
  teres, ii, 531
Kobresia scirpina, ii, 515
Koniga, i, 266 *note*, 271
  libyca, i, 268
  maritima, i, 268
Kouka, i, 288
Krameria, i, 14
Krubut, i, 372, 393
Kyllinga, i, 54, 144

Labiatæ, i, 38, 135, 297, 380
Labichea, i, 328
Lada Tchilli, i, 158
Lactuca virosa, ii, 263
Lagasca, ii, 274
Laguncularia, i, 20
Lambertia, ii, 11, 15, 18, 38, 157, 280
  echinata, ii, 158
  formosa, ii, 158, 280
  inermis, ii, 158, 280
  teretifolia, ii, 150
  uniflora, ii, 158, 280
Langsdorfia, i, 412
Lantana, i, 136
  polycephala, i, 94
Lappago, i, 57, 379 *note*
Lardizabaleæ, i, 555
Lasianthera, i, 151
Lasiopetalum, i, 11, 12
  rufum, ii, 708
Lastræa, ii, 568
Lauradia, i, 124
Laurelia, i, 26, 64
Laurinæ, i, 25, 149, 380
Laurus, i, 150
Lavandula, i, 297
  multifida, i, 297
Lavenia erecta, i, 165, 167; ii, 290
Laxmannia, ii, 292 *note*
Lecanora atra, i, 69
  brunnea, β nebulosa, i, 69
  elegans, i, 250
  decipiens, i, 69
    β dendritica, i, 69
  fusco-atra, i, 69
  gelida, i, 69
  lentigera, i, 69
  lepidosa, i, 69
  microphylla, i, 69
  parella, i, 69
  subfusca, i, 69
  sulphurea, i, 69
  ventosa, i. 69
Lechea, i, 453 *note*
Lecidea confluens, i, 69
  geographica, i, 69
  lurida, i, 69
  luteola, i, 69
  parasema, i, 69
Leea, i, 151
  sambucina, i, 165, 169
Leersia ciliata, i, 240
Legnotis, i, 119, 164
Leguminosæ, i, 22, 62, 104, 110, 113, 168, 288, 291, 307, 503
Leichardtia, i, 329
  australis, i, 329
Lemna, i, 448
  minor, i, 68
  trisulca, i, 68
Leontice, i, 124 *note*
  altaica, i, 362
  Leontopetalum, i, 362
  thalictroides, i, 361
Leontodon lividus, i, 210
  nana, i, 178
  palustre, i, 210
  Taraxacum, i, 178, 210
Leontopodium, ii, 302
Lepeyrodia, i, 145
Lepidium, ii, 380
  alpinum, ii, 378
  bidentatum, ii, 382
  bonariense, ii, 381
  campestre, ii, 382
  Cardamines, ii, 381

Lepidium didymum, ii, 373
  divaricatum, ii, 381
  Draba, ii, 381
  graminifolium, ii, 381
  Iberis, ii, 381, 383
  latifolium, ii, 380
  lyratum, ii, 380
  oleraceum, ii, 382
  perfoliatum, ii, 382
  petræum, ii, 378
  piscidium, ii, 382
  procumbens, i, 271
  rotundifolium, ii, 378
  ruderale, ii, 381
  sativum, ii, 382
  spinosum, ii, 382
  subulatum, ii, 382
  virginicum, ii, 383
Lepidocarpodendron, ii, 25, 26, 29
Lepidodendron Harcourtii, ii, 722
Lepidosperma, i, 53
Lepraria botryoides, i, 70
  flava, i, 70
  incana, i, 70
Leptadenia, i, 214
Leptomeria, i, 42
Leptospermum, i, 19, 311 *note*
Leptostomum, i, 352; ii, 341, 345
  erectum, i, 352
  gracile, i, 353
  inclinans, i, 352
  Menziesii, i, 353
Lepturus, i, 55; ii, 553
Lepyrodia, i, 54
Leskea, ii, 335
  complanata, i, 68
  rufescens, i, 235
Lessertia, ii, 442
  annua, ii, 442
  diffusa, ii, 443
  perennans, ii, 443
Leucadendron, ii, 15, 17, 21, 22, 24, 29, 35, 40, 41, 60, 183, 184, 723
  abietinum, ii, 52
  acaulon, ii, 73
  adscendens, ii, 49, 51, 184
  æmulum, ii, 52
  angustatum, ii, 43, 183
  argenteum, ii, 41
  buxifolium, ii, 44
  cancellatum, ii, 40
  cartilagineum, ii, 54
  cinaroides, *a*, ii, 61
  cinereum, ii, 46
Leucadendron comosum, ii, 52
  concinnum, ii, 50
  concolor, ii, 47
  Conocarpodendron, ii, 81
  corymbosum, ii, 46
  crassifolium, ii, 54
  cucullatum, ii, 88
  cyanoides, ii, 97
  decorum, ii, 46
  decurrens, ii, 48
  divaricatum, ii, 91
  elongatum, ii, 109
  ericifolium, ii, 54
  floridum, ii, 51
  fusciflorum, ii, 183
  glabrum, ii, 48, 50
  Globularia, ii. 53
  glomeratum, ii, 28, 106
  grandiflorum, ii, 47, 82
  hirtum, ii, 87
  Hypophyllocarpodendron, ii, 84
  imbricatum, ii, 44
  Lepidocarpodendron, ii, 66, 68
  Levisanus, ii, 45
  linifolium, ii, 183
  nanum, ii, 71
  oleæfolium, ii, 25
  ovale, ii, 48
  phylicoides, ii, 103
  pinifolium, ii, 28, 39
  platyspermum, ii, 51
  plumosum, ii, 42, 184
  proteoides, ii, 27, 91
  pubescens, ii, 53
  racemosum, ii, 120
  repens, ii, 69; β, ii, 75
  retusum, ii, 43, 62, 184, 187
  salignum, ii, 50
  scabrum, ii, 53
  Scolymocephalum, ii, 70
  sericeum, ii, 53
  Serruria, *α*, ii, 108; β, ii, 106
  sessile, ii, 43
  spathulatum, ii, 43
  speciosum, ii, 28, 64
  sphærocephalum, ii, 186
  spicatum, ii, 112
  squarrosum, ii, 47, 184
  strictum, ii, 48
  thymelæoides, ii, 90
  tortum, ii, 45, 183
  uliginosum, ii, 51
  venosum, ii, 48
  virgatum, ii, 49, 50
Leucadendros, ii, 26, 30, 31

Leucadendros africana, ii, 30
Leucadendrum, ii, 78
Leucas affinis, i, 94
    quinquedentata, i, 94
Leucodon, ii, 348
Leucolæna, i, 29
Leucophyta, ii, 286
Leucosia, i, 125
Leucospermum, ii, 20, 35, 78, 185, 271
    attenuatum, ii, 79
    buxifolium, ii, 82
    Conocarpum, ii, 81, 190
    crinitum, ii, 85
    diffusum, ii, 85
    ellipticum, ii, 80, 185
    grandiflorum, ii, 81, 82
    Hypophyllum, ii, 84
    lineare, ii, 79
    medium, ii, 80
    molle, ii, 85
    nutans, ii, 80
    oleæfolium, ii, 85
    patulum, ii, 82, 86
    puberum, ii, 82, 83
    spathulatum, ii, 83
    tomentosum, ii, 83
    Tottum, ii, 79
Levenhookia, i, 34
Leycesteria, ii, 542
Liatris, ii, 299 *note*
    spicata, ii, 270
Licania, i, 115
Lichen aphthosus, i, 251
    cucullatus, i, 251
    elegans, i, 250
    islandicus, i, 251
    lanatus, i, 251
    nivalis, i, 250
    normöricus, i, 251
    ochroleucus, i, 251
    odontellus, i, 251
    paschalis, i, 252
    ramulosus, i, 252
    vermicularis, i, 252
Lichenosæ, i, 66, 250
Liliaceæ, i, 299, 439, 449, 450, 513; ii, 278
Lime, i, 154, 156
Limnantheæ, ii, 363
Limnanthus, ii, 363
    Douglassii, ii, 364
Limodorum, ii, 689
    altum, ii, 487
    barbatum, ii, 694
Limodorum carinatum, ii, 694
    epidendroides, ii, 694
    hians, ii, 694
    longicorne, ii, 694
    nutans, ii, 488
    purpureum, ii, 487
    striatum, ii, 694
    Tankervilliæ, ii, 487
    triste, ii, 694
    tuberosum, ii, 486
    veratrifolium, ii, 694
    virens, ii, 694
Limonia, ii, 664
Linaria gracilis, i, 94
    hastata, i, 94
    propinqua, i, 94
Linconia, ii, 322
Lindernia japonica, ii, 505
Linkia, ii, 133
    lævis, ii, 136
Linnæa, ii, 324, 541, 673
Linschotenia, i, 315
Lipocarpha, i, 144
    argentea, i, 164, 169
Lipotriche, ii, 297 *note*
Lippia, i, 136
Liriope spicata, ii, 695
Lissochilus, ii, 692, 694
    speciosus, ii, 692, 707
Listera, ii, 483
    cordata, ii, 483
    ovata, ii, 483
Lithospermum? ambiguum, i, 94
Lobelia, i, 32
Lobeliaceæ, i, 292; ii, 269 *note*, 310, 679
Lobularia, i, 266
Loganeæ, i, 37
Logania, i, 37, 132
Lolium, i, 55; ii, 277
    perenne, i, 468 *note*, 530 *note*
Lomaria, ii, 525
Lomatia, i, 41, 64; ii, 38, 168
    dentata, ii, 169
    ferruginea, ii, 168
    ilicifolia, ii, 169
    longifolia, ii, 169
    obliqua, ii, 170
    polymorpha, ii, 169
    silaifolia, ii, 168
    tinctoria, ii, 168
Lomentaceæ, i, 23
Lonicera, ii, 687
Lonicereæ, ii, 324

Loranthaceæ, i, 413 *note*, 501
Lorantheæ, i, 288
Loranthus, i, 21, 120, 137, 288
  angustifolius, ii, 710
  calycinus, i, 94
  congestus, i, 94
  floribundus, i, 308
  lætus, i, 94
Loropetalum, ii, 323
Lotus arboreus, ii, 698
Loxidium, ii, 442
Loxocarpus, ii, 595, 606
  incana, ii, 606
Loxonia, ii, 580, 582, 595
  acuminata, ii, 582
  discolor, ii, 582
  hirsuta, ii, 584
Loxophyllum, ii, 585
Loxotis, ii, 577, 590, 595
  intermedia, ii, 577
  obliqua, ii, 577
Lunaria, ii, 390
  annua, ii, 390
  libyca, i, 262, 265
  parviflora, i, 262
  rediviva, ii, 390
Luzula campestris, i, 68, 217; ii, 515
  hyperborea, i, 216
  melanocarpa, ii, 515
  pilosa, i, 217
Luzuriaga, i, 50
Lychnis, i, 285
  apetala, i, 177, 198
  triflora, i, 178
Lycoperdon pratense, i, 253
Lycopodiaceæ, ii, 722
Lycopodineæ, i, 147
Lycopodium alpinum, ii, 518
  annotinum, ii, 518
  complanatum, ii, 518
  dendroideum, ii, 518
  Selago, i, 178; ii, 518
Lycopus europæus, i, 65
Lyellia, ii, 331, 345, 351
  crispa, ii, 333
Lygodium, i, 146
Lyonsia, ii, 232, 238
Lysionotus, ii, 585, 593, 594, 598
  serratus, ii, 598
  ternifolia, ii, 598
Lysipoma, ii, 679
Lyssostylis, ii, 142
Lythrum, ii, 238
Lythrum Salicaria, i, 68

Maba, i, 140; ii, 536
Macleaya cordata, i, 270 *note*
Macradenia, ii, 695
  lutescens, ii, 695
Macromitrium, ii, 335
Macropodium, ii, 397
  nivale, ii, 397
Madia, ii, 266
Mærua, i, 280 *note*
  angolensis, i, 281 *note*
  rigida, i, 280
  senegalensis, i, 280
  uniflora, i, 281 *note*
Mæsa, i, 151 *note*
Magnolia, ii, 705
Magnoliaceæ, i, 12, 149
Mahernia, i, 63
Maize, i, 155, 160
Malachra radiata, i, 109, 165
Malaguetta Pepper, i, 155
Malaxideæ, ii, 575
Malaxis, ii, 489
  lilifolia, ii, 489
  Loeselii, ii, 489
  nutans, ii, 488
  paludosa, ii, 489
Malcomia, i, 272; ii, 407
  littorea, ii, 407
Malesherbia, i, 387 *note*
Malpighiaceæ, i, 105
Malvaceæ, i, 11, 26, 104, 109, 168, 288; ii, 613
Mammillaria, i, 549
Mangifera, i, 112
Mangrove, i, 363
Manioc, i, 155, 160
Manisuris, ii, 554
Mantellia cylindrica, ii, 717
  nidiformis, ii, 717
Maranteæ, i, 49, 380; ii, 551
Marchantia hemisphærica, i, 69
  polymorpha, i, 69, 249
Marcgravia, ii, 357
Marigold, ii, 262
Marlea, ii, 322
  barbata, ii, 534
  begonifolia, ii, 532
Marsdenia, ii, 210
  cinarescens, ii, 211
  clausa, ii, 211
  erecta, ii, 212
  rostrata, ii, 212

Marsdenia suaveolens, ii, 211
  tinctoria, ii, 211
  velutina, ii, 211
  viridiflora, ii, 211
Marshallia, ii, 267 *note*
Marsilea quadrifolia, i, 68
Matelea, ii, 215
Mathiola, i, 272, 316; ii, 405
  elliptica, i, 94
  fenestralis, ii, 406
  incana, ii, 405
  odoratissima, ii, 406
  parviflora, ii, 406
  sinuata, ii, 406
  tricuspidata, ii, 406
  tristis, ii, 406
Matonia, ii, 542, 565
  pectinata, ii, 531, 542
Mazus, ii, 505
  rugosus, ii, 505
Meionectes, i, 21
Meisarrhena tomentosa, i, 93
Melaleuca, i, 19, 311; ii, 451
  armillaris, ii, 453
  Cajeputi, i, 19
  calycina, ii, 455
  coronata, ii, 454
  cylindrica, ii, 710
  decussata, ii, 454
  densa, ii, 456
  diosmifolia, ii, 452
  ericifolia, ii, 453
  fulgens, ii, 455
  genistifolia, ii, 452
  globifera, ii, 452
  gnidiæfolia, ii, 454
  hypericifolia, ii, 455
  incana, ii, 684
  lanceolata, ii, 710
  laurina, ii, 456
  Leucadendron, i, 19; ii, 451
  linariifolia, ii, 455
  myrtifolia, ii, 455
  nereifolia, ii, 456
  nodosa, ii, 453
  paludosa, ii, 451
  pulchella, ii, 454
  salicifolia, ii, 456
  scabra, ii, 454
  squamea, ii, 453
  squarrosa, ii, 455
  striata, ii, 452
  styphelioides, ii, 452
  thymifolia, ii, 454
  thymoides, ii, 452
Melaleuca uncinata, ii, 454
  viridiflora, ii, 451
Melampodium, ii, 284
  americanum, ii, 285
  australe, ii, 284
  humile, ii, 284
  longifolium, ii, 284
Melananthera, ii, 291, 296
  aspera, ii, 306, 307
Melanthaceæ, i, 298, 299 *note*
Melanthera, ii, 296
Melanthium punctatum, i, 298
Melastomaceæ, i, 116
Melastoma decumbens, i, 116
  octandra, i, 117
Melhania, ii, 509
  Denhamii, i, 288
  Erythroxylon, ii, 509
  Melanoxylon, ii, 509
Meliaceæ, i, 72, 123, 124, 149
Melica, i, 56
Melicocca, i, 108
Melicope, i, 16
Melocactus, i, 549
Memecylon, i, 118
Meniocus, i, 265, 268
Meniscium, ii, 566, 569
Menispermeæ, i, 379; ii, 652
Menonvillea, i, 264
Merendera, i, 298
Meriana, i, 118
Mertensia, i, 138
  dichotoma, i, 146 *note*, 164
Mesembryanthemum, i, 64, 556
  æquilaterale, i, 43, 309
  cordifolium, i, 556
  crystallinum, i, 556
  nodiflorum, i, 556
  papulosum, i, 556
Mesochlæna, ii, 569
Mesodactylis deflexa, ii, 547
Mestotes, i, 125
Metalasia, ii, 302
Metaplexis, ii, 224
Metastelma, ii, 227, 229
Metrosideros, i, 19
  quinquenervia, ii, 451
Meyera, ii, 283
Micadania, i, 295
Micrandra, ii, 644
  ternata, ii, 644
Micranthus, i, 134 *note*
Microchloa elongata, ii, 533
Microcorys, i, 39
Microloma, ii, 227, 229

Microloma lineare, ii, 228
  sagittatum, ii, 228
Micropus, ii, 285
Microstemma, ii, 200, 208
Microtea, i, 139, 139 *note*
Mikania chenopodifolia, i, 128
Millet, i, 160
Miltus, i, 139 *note*
Mimetes, ii, 20, 36, 86, 186
  capitulata, ii, 87
  cucullata, ii, 88, 190
  divaricata, ii, 91
  Hartogii, ii, 88, 190
  Hibbertii, ii, 89
  hirta, ii, 86, 191
  Massoni, ii, 89
  myrtifolia, ii, 90
  pauciflora, ii, 87
  purpurea, ii, 91
  thymelæoides, ii, 90
Mimosa, i, 294
  aspera, i, 110
  canescens, i, 110
  decipiens, ii, 446
  Habbas, i, 288
  nigricans, ii, 447
  pubescens, ii, 447
  Sophoræ, ii, 446
  stellata, i, 23
  taxifolia, i, 290 *note*
Mimoseæ, i, 22, 110, 288
Miquelia, ii, 652, 653
  cærulea, ii, 607
Mirbelia, ii, 435
  dilatata, ii, 436
  reticulata, ii, 435
Misodendron, i, 413 *note*
Mitella grandiflora, ii, 522
Mitrasacme, i, 37
Mnesithea, ii, 553
Mnium rostratum, i, 235
  turgidum, i, 178, 235
Modecca, i, 150, 387 *note;* ii, 686
  australis, ii, 705
Molina, ii, 294
Molucella integrifolia, i, 94
  repanda, i, 94
  scariosa, i, 94
Monachne, i, 57
Monimia, i, 25
Monimieæ, i, 25
Monkey Pepper, i, 161
Monnieria, i, 16
Monnina, i, 14
Monocaryum, i, 300
Monodora Myristica, i, 162 *note*
Monogamia, ii, 276
Monophyllea, ii, 595, 608
  Horsfieldii, ii, 608
Moquilea, i, 115
Moræa, i, 559
Morinda, i, 131
Moringa, i, 294
Moringeæ, i, 294
Mosses, i, 469
Murucuia, i, 386
Musa, i, 156, 157 *note*
  sapientum, i, 154, 156
  superba, i, 157 *note*
Musanga, i, 138, 153
Musci, i, 66
Myagrum, ii, 371
  arborescens, ii, 371
  hispanicum, ii, 412
  paniculatum, ii, 372
  perenne, ii, 369
  perfoliatum, ii, 371
  rugosum, ii, 369
  sativum, ii, 386
  saxatile, ii, 384
Myoporinæ, i, 339
Myoporum, i, 40, 63
Myrianthus, i, 138
Myrioneura nutans, ii, 534
Myriophyllum, i, 21, 22
Myristica, i, 381
Myrobroma fragrans, ii, 498
Myrospermum, i, 127 *note*
Myroxylon, i, 127 *note*
Myrsine, i, 150 *note*
Myrsineæ, i, 149, 293; ii, 536
Myrtacea, ii, 534
Myrtaceæ, i, 18, 20, 63, 75, 118, 307, 311
Mystropetalon, i, 414 *note*
Myzodendron, i, 413 *note*
  brachystachyum, i, 413 *note*
  punctulatum, i, 413 *note*
  quadriflorum, i, 413 *note*

Nama, i, 135
Nandina, i, 124 *note*
Nansiatum, ii, 651, 653
Napimoga, i, 120
Napoleona, i, 387, 388 *note*
Nardus, ii, 553
Nasturtium, ii, 399
  amphibium, i, 68; ii, 399
  officinale, ii, 399

Nasturtium pyrenaicum, ii, 399
  sagittatum, ii, 400
  sylvestre, ii, 399
  terrestre, ii, 399
Natter Wurtz, i, 214
Nauclea, i, 131
  Wallichiana, ii, 533
Neckera, ii, 335
  heteromalla, i, 69
  pennata, i, 69
Neli Tali, ii, 445
Nelsonia, i, 134
Nemophila, ii, 519
Neotteæ, i, 538
Neottia, ii, 481
  acaulis, ii, 481
  cernua, ii, 482
  elata, ii, 481
  glandulosa, ii, 482
  minor, ii, 482
  orchioides, ii, 481
  picta, i, 501; ii, 481
  pubescens, ii, 481
  repens, ii, 481
  speciosa, ii, 481
  spiralis, ii, 482
Nepenthes, i, 77, 386, 449; ii, 357
Nepeta azurea, i, 94
  indica, ii, 503
  virginica, ii, 504
Nephrodium, i, 61, 146; ii, 569
  fragrans, ii, 518
  rufidulum, ii, 518
Nerium, ii, 233, 242, 686
  antidysentericum, ii, 242, 244
  coronarium, ii, 242
  divaricatum, ii, 242
  obesum, ii, 242
  odorum, ii, 242
  Oleander, ii, 242, 243
  salicinum, ii, 242
  Zeylanicum, ii, 242, 243, 244
Nety, i, 289
Neurachne, i, 58
  alopecuroides, i, 337
  Mitchelliana, i, 337
  paradoxa, i, 336
Neurada prostrata, i, 288
Neurocarpæa, i, 131
  lanceolata, i, 94
Neurolæna, ii, 299
Nicandra, i, 133
Nicotiana, i, 158
  Australasiæ, i, 158
  undulata, i, 158
Niphobolus, ii, 568
Nisa, i, 120
Nitta, i, 289
Nivenia, ii, 20, 36, 110, 187
  capitata, ii, 115
  crithmifolia, ii, 113
  Lagopus, ii, 114
  marginata, ii, 111
  media, ii, 113
  mollissima, ii, 114, 187
  parvifolia, ii, 112
  sceptrum, ii, 111
  spathulata, ii, 111
  spicata, ii, 112
Notoceras, ii, 404
  canariensis, ii, 404
  mollis, ii, 274
Nuphar, i, 379 *note*, 451
Nürvala, i, 278
Nuxia congesta, i, 93
  dentata, i, 93
Nuytsia floribunda, i, 308
Nyctagineæ, ii, 587 *note*
Nyctagines, i, 81
Nymphæa, i, 74, 379 *note*, 451
  Lotus, i, 162, 165, 166
  pubescens, i, 165
Nymphæaceæ, i, 451, 555

Ochradenus, i, 281
Octadenia, i, 267
Octoblepharum, ii, 337, 339
  albidum, i, 165; ii, 337
  serratum, ii, 337
Octodiceras, ii, 334
Octomeria, ii, 491
  graminifolia, ii, 491
Ocymum, i, 135
  cinereum, i, 94
  monadelphum, i, 94
Œnothera, i, 467
Ogheghe, i, 155
Olacinæ, i, 136
Olacinea? ii, 538
Olax, i, 44, 136
  scandens, i, 136
  zeylanica, i, 136
Oldenlandia, ii, 532
  biflora, ii, 532
  herbacea, ii, 532
  pentandra, ii, 522
Oleina, ii, 535
Olmedia, i, 79
Omphalobium, i, 113
Onagrariæ, i, 21, 467

Oncidium, i, 515; ii, 494, 696
  altissimum, ii, 494
  bifolium, ii, 494
  carthagenense, ii, 494
  triquetrum, ii, 495
Oncoba, i, 108
Onobrychis simplicifolia, i, 95
Onoclea, ii, 525
Opercularia, i, 36, 131, 132
  volubilis, ii, 711
Ophiopogon spicatus, ii, 695
Ophiorrhiza bracteolata, ii, 534
  discolor, ii, 534
Ophiospermum, i, 126 *note*
Ophioxylum, i, 132
Ophrydeæ, i, 538
Ophrys, 1, 493, 538; ii, 479
  anthropophora, ii, 475
  apifera, i, 491, 502, 508, 540 *note*, 547; ii, 479
  aranifera, ii, 479
  corallorhiza, ii, 490
  cordata, ii, 483
  lilifolia, ii, 489
  Loeselii, ii, 489
  Monorchis, ii, 476
  muscifera, ii, 479
  myodes, ii, 479
  ovata, ii, 483
  spiralis, ii, 482
Opilia, ii, 536
Orange, i, 154, 156
Orchideæ, i, 48, 53, 62, 380, 405, 469, 487, 545, 557, 560; ii, 6, 547
Orchis, i, 493; ii, 473
  albida, ii, 477
  bicornis, ii, 479
  bifolia, ii, 477
  bractealis, ii, 476
  bracteata, ii, 476
  Burmanniana, ii, 478
  carnea, ii, 480
  ciliaris, ii, 477
  conopsea, ii, 475
  cristata, ii, 477
  fimbriata, ii, 477
  fusca, i, 547; ii, 474
  globosa, ii, 474
  hircina, ii, 474
  hyperborea, ii, 477
  latifolia, i, 500; ii, 474, 549
  mascula, ii, 473, 475, 491, 500, 502
  militaris, ii, 474
  Morio, i, 500, 540, 547; ii, 473
Orchis nigra, ii, 476
  papilionacea, ii, 475
  pectinata, ii, 478
  pyramidalis, ii, 474
  spectabilis, ii, 475
  ustulata, i, 547; ii, 473
  viridis, ii, 476
Ordeal tree, i, 153
Oreobolus, i, 53
Oreocallis, ii, 38, 165
  grandiflora, ii, 166
Orites, ii, 38, 159
  diversifolia, ii, 160
  revoluta, ii, 160
Oritina acicularis, ii, 189
Ormosia, ii, 420
  dasycarpa, ii, 420
Ornithidium, ii, 490
  coccineum, ii, 490
Orobanche compacta, i, 296
Orobancheæ, i, 557
Oropetium, ii, 553
Orthodon, ii, 337, 338
Orthotrichum, ii, 344, 345, 348, 349
  cupulatum, i, 178
Oryzopsis asperifolia, ii, 514
  parviflora, ii, 514
Osbeckia, i, 117
Osmunda barbara, i, 64
Osmundaceæ, i, 146
Othera, i, 150 *note*
Oudneya, i, 272 *note*
  africana, i, 272 *note*
Ovieda mitis, ii, 509
Ovvando, i, 159
Oxalideæ, i, 114
Oxalis, i, 64, 113
  corniculata, i, 65
  sensitiva, i, 114
Oxylobium, ii, 426
  arborescens, ii, 426
  cordifolium, ii, 426
  ellipticum, ii, 426
Oxypetalum, ii, 219
Oxyria, i, 177 *note*, 214
  reniformis, ii 215
Oxystelma, i, 134, 295; ii, 218
  Bornouense, i, 295 *note*
  esculentum, i, 134, 165, 295; ii, 219
Oxytropis arctica, i, 209, 254
  uralensis, i, 210
Ozothamnus, ii, 303

Pachynema complanatum, ii, 703

Pæonia Moutan, ii, 318
Pagamea, i, 37, 132
Paliurus, i, 26
Palmæ, i, 51; ii, 587 *note*
Pancratium, i, 364
Pandanus, ii, 718
    Candelabrum, i, 153
Paniceæ, i, 57, 145, 300; ii, 553, 572
Panicum, i, 55, 57, 146
    crus-galli, i, 68, 165
    ovale, i, 93
    turgidum, i, 303
Papaver nudicaule, i, 178, 190, 379 *note*
    radicatum, i, 190
Papaveraceæ, i, 190, 272, 559
Papaw, i, 154, 155, 156, 158
Papilionaceæ, i, 23, 24, 209, 295, 339
Pappophorum, i, 55
Paranomus, ii, 110
Parinarium, i, 115
Parkeria, ii, 570
Parkia, i, 289
    africana, i, 290 *note*
Parmelia caperata, i, 69
    conspersa, i, 69
    olivacea, i, 69
    parietina, i, 69
    physodes, i, 69
    plumbea, i, 69
    stellaris, i, 69
Parnassia, i, 559
Paronychia sedifolia, i, 94
Paropsia, i, 121, 387 *note*
Parrya, i, 195, 268, 271, 272 *note*
    arctica, i, 196
    macrocarpa, i, 197
Parsonsia, ii, 232, 237, 238
Paspalum, i, 55, 57
Passalia, i, 123
Passifloreæ, i, 121, 149, 280, 282, 384, 386, 392
Passura, i, 123
Patrisia, i, 125
Paullinia, i, 164
    japonica, i, 107
    pinnata, i, 107, 165, 172
Pavetta, ii, 269 *note*
    canescens, ii, 534
    congesta, i, 93
    ? lucens, ii, 533
    mollis, ii, 534
    nauchleiflora, ii, 533
    polyantha, ii, 533
    reflexa, i, 93
Pavetta weberæfolia, ii, 534
Pavonia, i, 25, 64
Pedicularis arctica, i, 213, 253
    hirsuta, i, 178
    Langsdorfii, i, 253
    sudetica, i, 214, 253
Peganum, i, 16
Pelargonium, i, 64
    abyssinicum, i, 95, 163
Peliosanthes Teta, i, 362; ii, 695
Peltaria, ii, 374
    alliacea, ii, 374
Peltidea aphthosa, i, 251
    canina, i, 69
Penæa, i, 64
Pennisetum dichotomum, i, 302
    glaucum, i, 68
    villosum, i, 93
Pentadactylon, ii, 133
Pentadynamis, i, 325
    incana, i, 325
Pentaloba sessilis, i, 123
Pentapetes Erythroxylon, ii, 509
Pentatropis cynanchoides, i, 94
Peperomia, i, 150
Pergularia, ii, 6, 210, 212, 237
    edulis, ii, 212
    glabra, ii, 212
    Japonica, ii, 212
    minor, ii, 212
    odoratissima, ii, 212
    purpurea, ii, 212
Periploca, i, 134; ii, 198, 231
    angustifolia, ii, 231
    capsularis, ii, 238
    emetica, ii, 230
    esculenta, i, 165; ii, 219
    græca, ii, 231
    indica, ii, 230
    lævigata, ii, 231
    Secamone, ii, 230
    sylvestris, ii, 214
    tunicata, ii, 222
Periploceæ, i, 469; ii, 230
Peripterygium quinquelobum, ii, 655
Perotis latifolia, i, 165
Persoonia, i, 116, 339; ii, 11, 17, 18, 20, 22, 23, 24, 37, 133
    articulata, ii, 137
    elliptica, ii, 137
    falcata, ii, 136
    flexifolia, ii, 135
    furruginea, ii, 136
    graminea, ii, 137
    hirsuta, ii, 134

Persoonia juniperina, ii, 134
  lanceolata, ii, 136
  latifolia, ii, 136
  laurina, ii, 136
  linearis, ii, 134
  longifolia, ii, 137
  lucida, ii, 135
  microcarpa, ii, 134
  mollis, ii, 134
  nutans, ii, 135
  pinifolia, ii, 134
  prostrata, ii, 136
  salicina, ii, 136
  scabra, ii, 135
  spathulata, ii, 135
  teretifolia, ii, 133
  virgata, ii, 135
Petaloma, i, 118
Petalostemma chenopodii, i, 94
Petalostylis, i, 328
  labicheoides, i, 328
Petiveria, i, 139
Petrobium, ii, 292 *note*, 314
Petrocallis, i, 268; ii, 386
  pyrenaica, ii, 386
Petrophila, i, 310; ii, 11, 17, 35, 55, 723
  acicularis, ii, 56
  diversifolia, ii, 57, 723
  filifolia, ii, 56, 57
  pedunculata, ii, 57
  pulchella, ii, 56
  rigida, ii, 56
  squamata, ii, 57
  teretifolia, ii, 56
  trifida, ii, 57
Peziza scutellata, i, 70
Phaca astragalina, i, 209
Phacelia, ii, 519
  parviflora, ii, 520
Phalænopsis, ii, 576
  amabilis, ii, 576
Phalaridæ, ii, 571
Phascum, i, 247
  alternifolium, i, 348
  bryoides, i, 247
  curvicollum, i, 248
  flexuosum, i, 248
  muticum, i, 69
Phaseolus, i, 154
Phaylopsis, i, 13
Phebalium, i, 17
Phelypæa sanguinea, i, 429
Philydrum, i, 48, 53; ii, 357
  lanuginosum, i, 53
Philydrum pygmæum, i, 53
Phippsia, i, 219
  algida, i, 220
Phlebodium, ii, 567
Phleum alpinum, i, 67
Phragmites, i, 58
Phylica, i, 26
Phyllanthus, ii, 279 *note*
Phyllocladus, i, 460
Physcia islandica, i, 251
Physematium molle, ii, 546
Physiphora, i, 123
Phytocrene, ii, 651, 652
Phytocreneæ, ii, 652
Phytolacca, i, 139
  abyssinica, i, 139
Phytolacceæ, i, 138
Piaranthus, ii, 200, 206
  pulla, ii, 206
  punctata, ii, 206
Picris hieracioides, i, 68
Pileanthus, i, 76
Pilocarpus, i, 16
Pilostyles, i, 414 *note*, 424, 430
  Berterii, i, 430
  Blanchetii, i, 430
  Calliandræ, i, 431
Pimelea, ii, 16
Pine apples, i, 154, 155
Pinus, i, 47, 455
Piper Æthiopicum, i, 105, 161
  caudatum, i, 150
  Cubeba, i, 150
Piperaceæ, i, 138, 149, 452
Piptocarpha, ii, 299 *note*
Pisonia morindifolia, ii, 534
Pistia Stratiotes, i, 164, 166, 169, 298
Pittosporeæ, i, 13, 63
Pittosporum, i, 13
  revolutum, ii, 268 *note*
Plagiloba, i, 272
Plagiopoda, ii, 146
Planta Aphyteja, i, 416
Plantago, ii, 281
Plantain, i, 154, 156
Platylobium, i, 25; ii, 436
  formosum, ii, 436
  lanceolatum, ii, 438
  microphyllum, ii, 438
  ovatum, ii, 438
  parviflorum, ii, 437
  Scolopendrium, ii, 437
  triangulare, ii, 437
Platypetalum, i, 192, 193
  dubium, i, 193, 253

Platypetalum purpurascens, i,192, 254
Platystemma, ii, 595, 608
Platyzoma, i, 59
Pleopeltis, ii, 566, 567
Pleurandra, i, 12
  acerosa, ii, 704
  bracteata, ii, 703
  cinerea, ii, 703
  furfuracea, ii, 703
  nitida, ii, 703
  parviflora, ii, 703
  pedunculata, ii, 704
  riparia, ii, 704
  scabra, ii, 704
  sericea, ii, 703
  stricta, ii, 704
Pleurogramma, ii, 569
Pleuropogon, i, 226
  Sabinii, i, 226, 256
Pleurothallis, i, 515 ; ii, 491
  ruscifolia, ii, 491
Pluchea Dentex, ii, 711
Plumbagineæ, i, 297
Plumbago eglandulosa, i, 94
Plumeria, ii, 247
Poa, i, 221
  abbreviata, i, 223, 255
  alpina, ii, 515
  angustata, i, 223, 255
  arctica, i, 224
  ciliaris, i, 165
  crocata, ii, 515
  flexuosa, i, 225
  laxa, i, 177, 224, 225
Poaceæ, i, 58, 145, 228, 300 ; ii, 553
Podalyria, ii, 422, 423
  alba, ii, 423
  argentea, ii, 424
  aurea, ii, 421
  australis, ii, 423
  biflora, ii, 424
  bracteata, i, 111
  calyptrata, ii, 424
  capensis, ii, 422
  cordata, ii, 424
  genistoides, ii, 422
  hirsuta, ii, 424
  lupinoides, ii, 421
  myrtillifolia, ii, 423
  sericea, ii, 424
  tinctoria, ii, 423
Podocarpus, i, 44, 47, 455, 460
  alpina, ii, 707
  antillarum, ii, 707
  asplenifolia, i, 47
Podocarpus cupressina, ii, 706
  elata, ii, 707
  ensifolia, ii, 706
  falcata, ii, 707
  Horsfieldii, ii, 533
  latifolia, ii, 707
  Nageia, ii, 706
  polystachya, ii, 706
  spicata, ii, 707
  spinulosa, ii, 707
  thuyoides, ii, 707
Podocarya, ii, 717
Podocoma, i, 329
  acuminata, ii, 462
  cuneifolia, i, 329
Podolepis, ii, 461
  rugata, ii, 461
Podolobium, ii, 425
  trilobatum, ii, 425
Podophyllum, i, 124 *note*
Podopogon, ii, 572
Podostemon Wallichii, ii, 533
Podostigma, i, 520
Pœcilodermis, ii, 637, 638
Pogonia, ii, 485
  divaricata, ii, 485
Pohlia, i, 236
  arctica, i, 236
  bryoides, i, 236
  purpurascens, i, 237
Poiretia linearis, ii, 440
Polanisia, i, 273
Polemoniaceæ, i, 135
Polemonideæ, i, 65
Polemonium dubium, ii, 520
Polygala abyssinica, i, 95
  linearis, i, 95
Polygaleæ, i, 13, 16, 63, 125, 282, 291, 380
Polygamia congregata, ii, 276
  segregata, ii, 276
Polygoneæ, i, 138, 214
Polygonum sinuatum, i, 94
  viviparum, i, 214
Polyosma Cunninghamii, ii, 708
Polypodiaceæ, ii, 525
Polypodium, i, 166 ; ii, 205
  arvonicum, ii, 254
  aureum, ii, 567
  decumanum, ii, 567
  Dipteris, ii, 562
  diversifolium, ii, 566
  Dryopteris, ii, 518
  Horsfieldii, ii, 531, 562
  hyperboreum, ii, 252

Polypodium ilvense, ii, 252
    lycopodioides, ii, 566
    melanopus, ii, 531
    phymatodes, ii, 543, 566
    propinquum, ii, 531
    quercifolium, ii, 566
    spinulosum, i, 83
    vulgare, ii, 518, 570
    Wallichii, ii, 531, 562
Polystichum, ii, 569
Polytoca, ii, 574
    bracteata, ii, 574
Polytrichoideæ, ii, 336, 351
Polytrichum, i, 348; ii, 331, 345, 349, 351
    alpinum, i, 234; ii, 336
    angustatum, ii, 338
    brevifolium, i, 233
    commune, i, 233; ii, 339
    hyperboreum, i, 233
    juniperinum, i, 178
    lævigatum, i, 234; ii, 337, 340
    magellanicum, ii, 337
    microstomum, ii, 339
    piliferum, i, 233
    propinquum, i, 233
    septentrionale, i, 234
    subrotundum, ii, 338
    undulatum, ii, 336, 338, 340
    urnigerum, ii, 339
Pomaderris, i, 26
Pomax, i, 36, 132
Pombalia, i, 122
Ponthieva, ii, 482
    glandulosa, ii, 482
Portlandia, ii, 268
Portulaca oleracea, i, 68
Potalia, i, 133
Potamogeton crispum, i, 68
    gramineum, i, 66, 68
    natans, i, 68
    perfoliatum, i, 68
Potentilla anserina, i, 68
    Brauniana, i, 178
    frigida, i, 178, 209
    grœnlandica, i, 178, 209
    hirsuta, i, 209
    Jamesoniana, i, 209
    macrantha, i, 209
    nivea, i, 208
    pulchella, i, 178, 208
    sericea, i, 178, 208
    Vahliana, i, 209
    verna, i, 209
Poterium, ii, 279
Poupartia, i, 112
Prestonia tomentosa, ii, 241
Primulaceæ, i, 151 *note*, 293; ii, 315, 581, 586
Prionopteris, ii, 531
Proserpinaca, i, 21
Prosopis, i, 22
Prostanthera, i, 39
Protea, ii, 10, 14, 15, 20, 24, 26, 29, 35, 40, 60, 185, 272
    abrotanifolia, ii, 103, 186
    abyssinica, i, 163; ii, 70
    acaulis, ii, 28, 72
    acerosa, ii, 78
    acufera, ii, 58
    acuifolia, ii, 71
    adscendens, ii, 104
    alba, ii, 46
    alopeceuroides, ii, 111
    amplexicaulis, ii, 77
    anemonifolia, ii, 59
    anethifolia, ii, 58
    angustata, ii, 73
    angustifolia, ii, 70
    arcuata, ii, 47; β, ii, 47
    argentea, ii, 12, 24, 25, 27, 30, 31, 42; β, ii, 50
    argentiflora, ii, 108
    aulacea, ii, 40
    barbata, ii, 64
    bracteata, ii, 40
    bruniades, ii, 46
    cæspitosa, ii, 76
    canaliculata, ii, 72
    cancellata, ii, 28, 30
    candicans, ii, 83, 187
    caudata, ii, 124, 125
    Chamelæa, ii, 48
    cinerea, ii, 45, 46
    coccinea, ii, 63
    comosa, ii, 52
    compacta, ii, 62
    concava, ii, 187
    conica, ii, 49
    conifera, ii, 27, 28, 49; A, ii, 49; α, ii, 50
    conocarpa, ii, 26, 28, 30, 31, 81; A, ii, 80
    cordata, ii, 77
    cordifolia, ii, 77
    coronata, ii, 64, 65
    corymbosa, ii, 46
    criniflora, ii, 85
    crinita, ii, 85
    cristata, ii, 66

Protea cucullata, ii, 88; β, ii, 89
cyanoides, ii, 97, 102
cynaroides, ii, 61, 185
decumbens, ii, 100, 104
dichotoma, ii, 56, 186
divaricata, ii, 91, 185
elliptica, ii, 80
elongata, ii, 73
florida, ii, 104
formosa, ii, 64, 80
fucifolia, ii, 56, 183, 184
fusca, ii, 27, 45
glabra, ii, 184
glaucophylla, ii, 73
globosa, ii, 47
globularia, ii, 53
glomerata, ii, 28, 98, 101, 106, 109
grandiflora, ii, 66, 69, 185
Gustaviana, ii, 112
heterophylla, ii, 85
hirta, ii, 30, 87
humiflora, ii, 77
humilis, ii, 77
hypophylla, ii, 31, 84
Hypophyllocarpodendron, ii, 84
imbricata, ii, 44, 118
incompta, ii, 67
incurva, ii, 52, 124
lacticolor, ii, 63
lævis, ii, 74
Lagopus, ii, 113, 114
lanata, ii, 117
latifolia, ii, 61, 62
Laureola, ii, 47
Lepidocarpodendron, ii, 28; β, ii, 64, 66
Lepidocarpon, ii, 65
Levisanus, ii, 28, 44, 45
linearis, ii, 79, 183
linifolia, ii, 183
longiflora, ii, 62, 68, 185
lorea, ii, 76
macrophylla, ii, 64
melaleuca, ii, 65
mellifera, ii, 13, 68
mucronifolia, ii, 70
myrtifolia, ii, 90
nana, ii, 71, 73
nectarina, ii, 158
neriifolia, ii, 66
obliqua, ii, 42; β, ii, 47; α, ii, 47
ochroleuca, ii, 63
odorata, ii, 184
Protea odoratissima, ii, 71
pallens, ii, 28, 48, 49
parviflora, ii, 28, 40
patens, ii, 67
patula, ii, 106
pedunculata, ii, 98
pendula, ii, 71
phylicoides, ii, 99, 100
pinifolia, ii, 39
pinnata, ii, 96
plumosa, ii, 42
procumbens, ii, 104
prolifera, ii, 122
prostrata, ii, 187
pubera, ii, 82
pulchella, ii, 56, 66
purpurea, ii, 27, 91
racemosa, ii, 25, 121, 122
repens, ii, 75, 77
revoluta, ii, 73
rosacea, ii, 71
saligna, ii, 25, 27, 28, 50, 51
scabra, ii, 74
Sceptrum, ii, 111, 112
Scolopendrium, ii, 76
Scolymus, ii, 70
sericea, ii, 53
Serraria, ii, 26, 108
spathulata, ii, 111, 112
speciosa, ii, 28, 63, 66, 67
speciosa nigra, ii, 65
sphærocephala, ii, 97, 103, 186; A, ii, 98
spicata, ii, 112, 113
strobilina, ii, 28, 47, 184
tenax, ii, 72
tenuifolia, ii, 74
teretifolia, ii, 52
thyrsoides, ii, 109
tomentosa, ii, 83
torta, ii, 45
totta, ii, 28, 79
tridactylites, ii, 59
triternata, ii, 108, 186
turbiniflora, ii, 76
vestita, ii, 80
villosa, ii, 100, 186
villosiuscula, ii, 82
virgata, ii, 78
Proteaceæ, i, 21, 36, 40, 63, 80, 81, 307, 310, 339, 449, 501; ii, 5, 271, 317
Proteæ, ii, 9
Prestonia, ii, 233, 241
Primulaceæ, i, 297

Prunella vulgaris, 1, 68
Psilotum, ii, 722
Psilurus, ii, 553
Psoralea, i, 322
Psychotria, i, 131
Ptelidium, i, 107
Pteranthus, ii, 543
Pteris, i, 146 ; ii, 250
  crispa, ii, 525
  esculenta, i, 309
  gracilis, ii, 518
  thalictroides, ii, 526
Pterocarpus, i, 106, 111, 290
  Ecastophyllum, i, 111, 165, 172
  erinacea, i, 290
  lunatus, i, 111, 165, 172
  senegalensis, i, 200
Pterocymbium, ii, 611, 641
  javanicum, ii, 611
Pterogonium declinatum, i, 354
Pterolobium lacerans, i, 94
Pterostylis, ii, 486, 549
  obtusa, ii, 486
Pterygodium, ii, 480
  Volucris, ii, 480
Pterygota, ii, 620, 638
  alata, ii, 639
Pterygynandrum, ii, 345
Ptilotus latifolius, i, 336
Ptychocarpa, ii, 144
Ptychocarya, ii, 532
Ptychostomum pulchellum, i, 237
Pulicaria aromatica, i, 95
  involucrata, i, 95
  viscida, i, 95
Pultenæa, ii, 433
  acerosa, ii, 709
  biloba, ii, 670
  daphnoides, ii, 433
  ericoides, ii, 430
  flexilis, ii, 434
  hispidula, ii, 709
  illicifolia, ii, 425
  linophylla, ii, 433
  nana, ii, 425
  obcordata, ii, 433
  retorta, ii, 431
  retusa, ii, 433
  rigida, ii, 709
  rubiæfolia, ii, 436
  scabra, ii, 433
  stipularis, ii, 434
  tenuifolia, ii, 670
  vestita, ii, 434, 670
  villosa, ii, 434
Pultenæa viscosa, ii, 709
Pumpkins, i, 154
Pupalia, ii, 544
Pycnanthemum, ii, 503
  aristatum, ii, 504
  incanum, ii, 503
  virginicum, ii, 504
Pycnospora, ii, 708
  hedysaroides, ii, 708
Pyrenacantha, ii, 652, 653
Pyrethrum, ii, 691
Pyrola rotundifolia, i, 177

Quadria, ii, 138
  heterophylla, ii, 139
Quinchamalium, i, 137
Quirivelia Zeylanica, ii, 236

Racomitrium lanuginosum, i, 238
Rafflesia, i, 374, 558 ; ii, 358
  Arnoldi, i, 374, 401, 415, 424 ; ii, 724
  Cumingii, 405 *note*, 425 ; ii, 724
  Horsfieldii, i, 390 *note*, 425
  Manillana, i, 405 *note*, 425
  Patma, i, 402, 424 ; ii, 724
  Titan, i, 415
Rafflesiæ, i, 424
Rafflesiaceæ, i, 423
Rafnia perfoliata, ii, 423
  retusa, ii, 439
Ramalina fastigiata, i, 70
  fraxinea, i, 70
Ranunculaceæ, i, 65, 188, 318
Ranunculus affinis, i, 189, 253
  auricomus, i, 189, 253
  collinus, ii, 703
  frigidus, i, 188
  glacialis, i, 178
  hyperboreus, i, 189
  inundatus, ii, 703
  Laxmanni, i, 188
  nivalis, i, 188, 253
  plebeius, ii, 703
  Pumilio, ii, 703
  pygmæus, i, 188
  Sabinii, i, 189, 253
  sessiliflorus, ii, 703
  Smithii, i, 188
  sulphureus, i, 178, 188
  Willdenovii, i, 188
Raphanus, ii, 412
  erucoides, ii, 410
  maritimus, ii, 412
  Raphanistrum, ii, 412

Raphanus sativus, ii, 412
    tenellus, ii, 413
Raphia vinifera, i, 142, 153, 154
Rapinia herbacea, i, 171 *note*
Rapistrum, ii, 372
    ægyptiacum, ii, 372
    paniculatum, ii, 372
    rugosum, ii, 319
Ratzburgia, ii, 552
    pulchella, ii, 552
Ravenala, i, 157 *note*
Red Snow, i, 178
Red Water Tree, i, 153
Reevesia Wallichii, ii, 632
Reimaria, i, 57
Renanthera coccinea, i, 548
Reseda, i, 363
    odorata, i, 284
    pedunculata, i, 94
    propinqua, i, 281
    suffruticulosa, i, 281
    undata, i, 281
Resedaceæ, i, 65, 272, 273, 281
Restiaceæ, i, 52, 53, 54, 63, 339; ii, 278
Rhabdothamnus, ii, 594, 595, 608
    Solandri, ii, 608
Rhamnacea? ii, 537
Rhamneæ, i, 12, 13, 26, 27, 114, 120
Rhamnus, i, 26
    inebrians, i, 94
Rhaphis, i, 302
Rheum, i, 214
    digynum, i, 215
Rhexia, i, 116
Rhinanthaceæ, i, 14
Rhinantheæ, ii, 580
Rhincoglossum obliquum, ii, 577
Rhizophora, i, 20, 119, 364, 381
    setiformis, i, 70
Rhizophoreæ, i, 20, 119
Rhodolæna, i, 108
Rhodoraceæ, i, 109
Rhopala, ii, 13, 15, 18, 21, 22, 38, 160, 532
    cochinchinensis, ii, 161
    dentata, ii, 162
    diversifolia, ii, 162
    media, ii, 161
    moluccana, ii, 161
    montana, ii, 160
    nitida, ii, 161
    peruviana, ii, 162
    serrata, ii, 162
    sessilifolia, ii, 163
Rhus, i, 112
Rhynchothecum, ii, 609
Riania, i, 123
Ribes, ii, 522
Riccia fluitans, i, 69
    glauca, i, 69
    natans, i, 69
Rice, i, 161
Richea, ii, 286
    glauca, ii, 286
Richœia, i, 119
Ricinus, ii, 279
Ricotia, i, 264; ii, 390
    ægyptiaca, ii, 390
Rinorea, i, 123
Ritchiea, i, 279
Rivina, i, 139, 164
    octandra, i, 139 *note*
Robergia, i, 112
Robinia subdecandra, ii, 421
Roccella, i, 252
    fuciformis, i, 69, 165
Rohria, i, 126
Rolandra, ii, 274
Rondeletia febrifuga, i, 131
Ropala nitida, ii, 161
    hameliæfolia, ii, 163
Roridula, i, 94
    paradoxa, i, 94
    parviflora, i, 94
Rosa abyssinica, i, 94
Rosacea, ii, 536
Rosaceæ, i, 65, 77, 109, 115, 120, 288, 291; ii, 356
Rottbölliaceæ, ii, 553
Rottböllia Cœlorachis, ii, 553
    perforata, ii, 553
Roupala, ii, 160
    montana, ii, 161
    pinnata, ii, 188
    sessilifolia, ii, 163
Rourea, i, 112
Rubiaceæ, i, 36, 37, 104, 130, 295; ii, 14, 195, 269 *note*, 314, 588 *note*, 687
Rubus compar, i, 94
Ruellia balsamea, i, 135
    Blechum, ii, 506
    cristata, ii, 506
    infundibuliformis, ii, 505
    uliginosa, i, 135
Ruizia, i, 25
Rulingia, ii, 671, 672
Rumex, i, 214
    digynus, i, 177, 215

Rupala montana, ii, 161
Ruta, i, 16
Rutacea, i, 285
Ryania, i, 121, 387 *note*

Saccharum, i, 57, 146
Sadoo, i, 94
Safu, i, 112, 154, 160
Sagonea palustris, i, 135
Sagus Palma-pinus, i, 142
Salacia, i, 107
Salicariæ, i, 120
Salisburia, i, 460
Salix arctica, i, 178, 215
  curviflora, ii, 292
  hirsuta, ii, 292
  oleifolia, i, 379 *note*
  scandens, ii, 292
Salmea, ii, 291, 317
Salomonia, i, 14
Saltia, ii, 543, 544, 545
  abyssinica, i, 94; ii, 546
Salvia abyssinica, i, 93
Salviæ, i, 380
Samolus, i, 65, 151 *note*, 293, 397
  ebracteatus, i, 297
  Valerandi, i, 68, 297
Samydeæ, i, 122, 126; ii, 535, 536, 537
Santalaceæ, i, 20, 41, 44, 136, 413 *note*, 501
Santalum, i, 42
Santolina, ii, 26, 287, 291
Sapindaceæ, i, 107; ii, 537, 659
Sapindus, i, 107
Sapoteæ, i, 295
Sapria, i, 426
  Himalayana, i, 426
Sarcocephalus, i, 153, 155
Sarcolobus, ii, 214
Sarcophyte, i, 389
Sarcostemma, ii, 226
Sarcostigma, ii, 648, 651
  Horsfieldii, ii, 648
Sarmienta, ii, 586
Sarracenia, ii, 357
Satureja ovata, i, 94
  punctata, i, 94
Satyrium, i, 504; ii, 479
  albidum, ii, 477
  carneum, ii, 480
  cucullatum, ii, 479
  hians, ii, 694
  hircinum, ii, 474
  nigrum, ii, 476
Satyrium pustulatum, i, 497
  repens, ii, 481
  viridis, ii, 476
Saururus, i, 452
Savignya, i, 265 *note*; 271
  Ægyptiaca, i, 262
Saxifraga, i, 201
  bulbifera, i, 205
  cæspitosa, i, 177, 205, 254
  cernua, i, 177, 205
  flagellaris, i, 177, 202
  foliolosa, i, 205
  Hirculus, i, 177, 202
  hyperborea, i, 204
  longiscapa, i, 205
  nivalis, i, 204
  oppositifolia, i, 177, 201
  petiolaris, i, 177, 204
  propinqua, i, 177, 202
  rivularis, i, 177, 204
  setigera, i, 177, 202
  stellaris, i, 205
  tricuspidata, i, 177, 203
  uniflora, i, 204, 254
  venosa, i, 204
Saxifrageæ, i, 20, 65, 182 *note*, 201; ii, 522
Scabiosa, ii, 275, 278, 315
  atropurpurea, ii, 278
  succisa, ii, 278
Scævola, i, 34
  depauperata, i, 331
Scalia jaceoides, ii, 462
Scaphium, ii, 611
Schistostega pennata, ii, 344
Schivereckia, i, 265
Schizopetalon, ii, 697
Schlotheimia, ii, 335
Schœnus nemorum, i, 54
Schwenckia, i, 164
  americana, i, 165, 167
Scitamineæ, i, 49, 53, 59, 380, 452, 501; ii, 317, 548, 550
Scirpus, i, 300
  cæspitosus, ii, 513
  lacustris, i, 68; ii, 513
  maritimus, i, 68; ii, 513
  mucronatus, i, 68
  palustris, ii, 513
  sylvaticus, ii, 514
  triqueter, i, 68
Sclerachne, ii, 573
  punctata, ii, 573
Scleria macrocarpa, ii, 532
Sclerothamnus, ii, 432

Sclerothamnus microphyllus, ii, 432
Scolopendrium, i, 60
Scolymocephalus, ii, 30, 49
Scoparia dulcis, i, 164, 167
Scottia, i, 25; ii, 438
  dentata, ii, 439
Scrophularinæ, i, 135, 213, 296, 532; ii, 585
Secamone, ii, 229
Securidaca, i, 14, 291
Seetzenia africana, i, 286
Seguieria, i, 139
Selliguea, ii, 566
Semecarpus, i, 43, 112
Sempervivum tectorum, i, 379 *note*
Senna obovata, i, 294
Senra, i, 317
Sensitivæ, i, 114
Serapias, ii, 478
  cordigera, ii, 478
  ensifolia, ii, 484
  grandiflora, ii, 484
  latifolia, ii, 484
  Lingua, ii, 478
  palustris, ii, 484
  rubra, ii, 485
Sergilus, ii, 293
Serpicula, i, 21
Serraria, ii, 92
Serratula tinctoria, ii, 301 *note*
Serruria, ii, 14, 15, 17, 19, 36, 92, 186
  acrocarpa, ii, 92, 186
  adscendens, ii, 104
  æmula, ii, 103
  Aitoni, ii, 94
  arenaria, ii, 96
  Bergii, ii, 186
  Burmanni, ii, 107
  candicans, ii, 107, 187
  ciliata, ii, 101
  compar, ii, 107
  congesta, ii, 101, 186
  crithmifolia, ii, 109
  cyanoides, ii, 96
  cygnea, ii, 92
  decipiens, ii, 106, 107
  decumbens, ii, 104
  diffusa, ii, 95
  elevata, ii, 94
  elongata, ii, 109
  flagellaris, ii, 105
  florida, ii, 104
  fœniculacea, ii, 101
  furcellata, ii, 97
Serruria glaberrima, ii, 92
  glomerata, ii, 106
  hirsuta, ii, 99, 186
  nitida, ii, 102
  Niveni, ii, 100
  pedunculata, ii, 98, 186
  phylicoides, ii, 103
  pinnata, ii, 95
  Roxburghii, ii, 107
  rubricaulis, ii, 105
  scariosa, ii, 97
  scoparia, ii, 98
  simplicifolia, ii, 95
  squarrosa, ii, 102
  Stilbe, ii, 99
  triternata, ii, 108
  villosa, ii, 100
Sesameæ, i, 295
Sesamum pterospermum, i, 94, 295
Sesban, ii, 443
Sesbania, ii, 443
  aculeata, ii, 443
  ægyptiaca, ii, 443
  grandiflora, ii, 443
Shea Tree, i, 295
Shrubby Holcus, i, 154, 160
Sida, i, 109
  acuminata, i, 95
  gracilis, i, 95
  juncea, i, 165
  micropetala, ii, 709
  pannosa, i, 95
  periplocifolia, i, 165, 171
Sideroxylum, i, 296
Sieversia, i, 206
  humilis, i, 253
  Rossii, i, 207, 253
Silene, i, 285
  acaulis, i, 177
Siliquaria arabica, i, 275
  glandulosa, i, 94; ii, 415
Silphium trifoliatum, ii, 263
Simsia, i, 41; ii, 15, 17, 18, 37, 126
  anethifolia, ii, 127
  tenuifolia, ii, 127
Sinapis, ii, 410
  alba, ii, 410
  Allionii, ii, 410
  arvensis, ii, 410
  chinensis, ii, 411
  erucoides, ii, 411
  frutescens, ii, 411
  hispanica, ii, 412
  incana, ii, 412
  juncea, ii, 411

Sinapis lævigata, ii, 411
  millefolia, ii, 402
  muralis, ii, 412
  nigra, ii, 411
  orientalis, ii, 410
  pubescens, ii, 411
  pyrenaica, ii, 401
  tenuifolia, ii, 411
Siphonanthus angustifolia, ii, 509
  indica, ii, 509
Siphonia, ii, 279
Sisymbrium, ii, 400
  altissimum, ii, 401
  amphibium, ii, 399
  arenosum, ii, 396
  asperum, ii, 401
  austriacum, ii, 401
  Columnæ, ii, 400
  Irio, ii, 400
  Loeselii, ii, 398
  millefolium, ii, 402
  molle, ii, 400
  monense, ii, 409
  murale, ii, 412
  Nasturtium, i, 279; ii, 399
  officinale, ii, 401
  orientale, ii, 400
  palustre, ii, 399
  pannonicum, ii, 401
  polyceratium, ii, 401
  pyrenaicum, ii, 399
  sagittatum, ii, 400
  sinapoides, ii, 401
  Sophia, ii, 402
  supinum, ii, 401
  strictissimum, ii, 402
  sylvestre, ii, 399
  tanacetifolium, ii, 402
  tenuifolium, ii, 412
  terrestre, ii, 399
Skitophyllum, ii, 334
Smeathmannia, i, 121, 150, 386
  lævigata, i, 387
  media, i, 387
  pubescens, i, 387
Smithia, ii, 444
  sensitiva, ii, 444
Sobreya, ii, 284
Sodada decidua, i, 279
Solanaceæ, ii, 267
Solanum, i, 381
  cinereum, i, 94
  uncinatum, i, 94
Solidago urticæfolia, ii, 289
Soliva, ii, 281
Soliva pedicellata, ii, 281
Sonchus oleraceus, i, 68
  sibiricus, ii, 263
Sonerila arguta, ii, 533
  grandiflora, ii, 533
  tenera, ii, 533
Sophora, ii, 419
  alopecuroides, ii, 420
  australis, ii, 423
  cœrulea, ii, 423
  cordata, ii, 424
  flavescens, ii, 420
  japonica, ii, 420
  juncea, ii, 429
  lupinoides, ii, 421
  microphylla, ii, 419
  monosperma, ii, 420
  occidentalis, ii, 420
  sericea, ii, 424
  tetraptera, ii, 419
  tomentosa, ii, 420
Sorindeia, i, 112
Sorocephalus, ii, 36, 115
  diversifolius, ii, 118
  imberbis, ii, 116
  imbricatus, ii, 118
  lanatus, ii, 117
  salsoloides, ii, 116
  setaceus, ii, 116
  spatalloides, ii, 117
  tenuifolia, ii, 117
Southwellia, ii, 618
Sparmannia, i, 108
Spatalla, ii, 14, 15, 17, 19, 20, 21, 36, 115, 119
  bracteata, ii, 121
  brevifolia, ii, 125
  caudata, ii, 124
  incurva, ii, 124
  laxa, ii, 121
  mollis, ii, 119
  nivea, ii, 120
  pedunculata, ii, 120
  polystachya, ii, 123
  prolifera, ii, 117, 122
  propinqua, ii, 124
  pyramidalis, ii, 123
  ramulosa, ii, 120
  sericea, ii, 122
  Thunbergii, ii, 125
Spermacoce, i, 131, 295
  brachystema, ii, 711
  lasiocarpa, ii, 531
  longicaulis, ii, 531
  membranacea, ii, 711

Spermacoce purpureo-cærulea, ii, 711
  ramosissima, ii, 531
  stricta, ii, 531
  suffruticosa, ii, 711
  tenera, ii, 531
  tubularis, ii, 531
Spermadictyon suaveolens, ii, 534
Sphæria ophioglossoides, i, 70
Sphærolobium, ii, 429
  grandiflorum, ii, 709
  medium, ii, 430
  minus, ii, 430
  vimineum, ii, 429
Sphærophoron compressum, i, 70
  coralloides, i, 70
Sphæropteris, ii, 546
Sphagnum capillifolium, i, 69
Sphenoclea zeylanica, i, 162, 165, 167, 170
Sphenogyne, ii, 465
  abrotanifolia, ii, 466
  anthemoides, ii, 465
  crithmifolia, ii, 466
  dentata, ii, 466
  odorata, ii, 466
  scariosa, ii, 466
Spilanthus, ii, 291, 317
  arboreus, ii, 292 *note*
  atriplicifolius, ii, 290
  tetrandrus, ii, 292 *note*
Splachneæ, ii, 337
Splachnum, i, 240; ii, 343, 347
  angustatum, i, 243; ii, 337
  arcticum, i, 243, 244, 253
  exsertum, i, 245
  Frælichianum, i, 241
  longicollum, i, 241
  luteum, ii, 337
  magellanicum, i, 242
  mnioides, i, 244, 246, 253
  octoblepharum, i, 242
  paradoxum, i, 245, 246
  propinquum, i, 243, 244
  rubrum, ii, 337
  squamosum, ii, 337
  tenue, i, 241
  vasculosum, i, 243
  Wormskioldii, i, 241, 243, 256
Sporobolus coromandelianus, ii, 532
  diander, ii, 532
Staavia, ii, 327
Stachytarpheta cinerea, i, 93
  indica, i, 136
Stackhousia, i, 27, 63
Stæhelina, ii, 285
Stapelia, i, 64; ii, 6, 200, 206, 675
  adscendens, ii, 208
  ambigua, ii, 207
  articulata, ii, 207
  Asterias, ii, 207
  campanulata, ii, 206
  chinensis, ii, 209
  geminata, ii, 207
  glandulifera, ii, 207
  guttata, ii, 206
  hirsuta, ii, 207
  lepida, ii, 207
  mixta, ii, 207
  pedunculata, ii, 207
  pulla, ii, 206
  punctata, ii, 206
  revoluta, ii, 207
  sororia, ii, 207
  stellaris, ii, 207
  tuberosa, ii, 675
  variegata, ii, 207
  venusta, ii, 206
  verrucosa, ii, 207
  vetula, ii, 207
Statice Armeria, i, 297
  Taxanthema, i, 297
Stauntonia, i, 379 *note*
  angustifolia, ii, 533
  latifolia, ii, 533
Stauranthera, ii, 582, 591, 595, 606
  ecalcarata, ii, 607
  grandifolia, ii, 607
Stelis, i, 515; ii, 491
  micrantha, ii, 491
  ophioglossoides, ii, 491
Stellaria Edwardsii, i, 199, 254
  nitida, i, 199, 254
Stellatæ, i, 36, 130
Stemodia, ii, 504
  parviflora, ii, 504
Stenocarpus, i, 41; ii, 12, 38, 170
  Forsteri, ii, 170
  salignus, ii, 171
Stenochilus, i, 333, 339
  curvipes, i, 334
  glaber, i, 334
  longifolius, i, 334
  maculatus, i, 334
  ochroleucus, i, 334
  pubiflorus, i, 334
  salicinus, i, 334
Stenopetalum, i, 192; ii, 705
  lineare, ii, 705
Sterculia, ii, 614, 626

Sterculia abyssinica, i, 94 ; ii, 616, 627
  acuminata, i, 153 ; ii, 618, 642
  alata, ii, 620, 639
  angustifolia, ii, 622 *note*, 633
  Balanghas, ii, 614, 633
  Candollei, ii, 636
  caribæa, ii, 629
  carthaginensis, ii, 622 *note*, 628
  ceramica, ii, 636
  Chicka, ii, 628
  coccinea, ii, 632
  colorata, i, 363 ; ii, 618, 640
  comosa, ii, 631
  cordata, ii, 631
  cordifolia, ii, 620, 642
  cuneata, ii, 634
  cuspidata, ii, 635
  ferruginea, ii, 634
  fœtida, ii, 614, 620, 622 *note*, 626
  frondosa, ii, 629
  fulgens, ii, 640
  grandiflora, ii, 642
  grandifolia, ii, 635
  guttata, ii, 630
  Helicteres, ii, 628
  heterophylla, ii, 641
  insularis, ii, 635
  Ivira, ii, 629
  Jackiana, ii, 634
  Javanica, ii, 631
  lævis, ii, 632
  lanceæfolia, ii, 630
  lanceolata, ii, 631
  longifolia, ii, 631
  macrocarpa, ii, 642
  macrophylla, ii, 631
  madagascariensis, ii, 630
  mexicana, ii, 627
  mollis, ii, 634
  monosperma, ii, 633
  nitida ii, 642
  nobilis, ii, 622 *note*, 633
  oblongata, ii, 635
  oblongifolia, ii, 642
  obovata, ii, 636
  parviflora, ii, 635
  parvifolia, ii, 631
  platanifolia, i, 363 ; ii, 616, 639
  polyphylla, ii, 626
  populifolia, ii, 636, 639
  propinqua, ii, 629
  punctata, ii, 628
  Punduana, ii, 632
  pyriformis, ii, 640
  quadrifida, ii, 622 *note*, 636
Sterculia Roxburghii, ii, 630
  rubiginosa, ii, 634
  rugosa, ii, 630
  scaphigera, ii, 640
  Scaphium, ii, 640
  Spangleri, ii, 632
  stipularis, ii, 635
  striata, 629
  surinamensis, ii, 630
  tomentosa, ii, 616, 628, 640, 643
  Tragacanthæ, ii, 622 *note*, 636
  Triphaca, ii, 628
  urceolata, ii, 636
  urens, ii, 622 *note*, 627
  versicolor, 627
  verticillata, ii, 642
  villosa, ii, 622 *note*, 623, 627
  Wallichii, ii, 640
Sterculiaceæ, i, 11, 384, 388 ; ii, 611
Sterculicæ, ii, 614, 620, 624
Stereocaulon paschale, i, 70, 252
Stereoxylon, ii, 523
Sticta crocata, i, 69
  pulmonacea, i, 69
  scrobiculata, i, 69
Stigmaria ficoides, ii, 721
Stipa, i, 56
  canadensis, ii, 514
  juncea, ii, 514
Strelitzia, i, 157 *note*
Streptocarpus, ii, 590, 594, 604
  Bojeri, ii, 604
  Helsingbergii, ii, 604
  paniculata, ii, 604
  Roxii, ii, 604
  Thompsonii, ii, 604
Strœmia farinosa, i, 94, 276
  longifolia, i, 94
  rotundifolia, i, 94
Strophanthus, ii, 233, 243
Struchium americanum, i, 165
Sturtia, i, 317
  gossypioides, i, 317
Stylideæ, i, 34, 63, 339 ; ii, 269 *note* 312
Stylidium, i, 34 ; ii, 322, 532
  adnatum, ii, 678
  breviscapum, ii, 678
  falcatum, ii, 678
  fasciculatum, ii, 678
  propinquum, ii, 678
Stypandra, i, 50
Stypheliæ, i, 38
Suag, i, 279
Subularia, i, 192, 254 ; ii, 384

Subularia aquatica, ii, 384
Succowia, ii, 375
  balearica, ii, 375
Sugar-cane, i, 154, 156
Sutherlandia, ii, 442
  frutescens, ii, 442
Symphionema, ii, 17, 37, 131
  montanum, ii, 131
  paludosum, ii, 13, 131
Symphoria, ii, 672
  racemosa, ii, 672
Symphoricarpus, ii, 324, 542
Symploceæ, i, 388 *note*
Symplocos, ii, 245
Synaphea, i, 41, 82, 381; ii, 11, 15, 17, 18, 21, 37, 129
  dilatata, i, 82; ii, 130
  favosa, ii, 130
  petiolaris, ii, 130
  polymorpha, ii, 130
  ruralis, i, 239
Syntrichia mucronifolia, i, 239
Systylium, i, 241, 247; ii, 337
Swainsona, ii, 441
  coronillifolia, ii, 442
  grandiflora, i, 323; ii, 441
  Greyana, i, 323, 324
  ? laxa, i, 324
Swartzia capillacea, i, 238

Tabernæmontana, ii, 242
Tamarind, i, 154, 156
Tamarindus indica, i, 154
Tamariscineæ, i, 288
Tamarix gallica, i, 285
Tapura, i, 126
  guianensis, i, 126
Targionia hypophylla, i, 69
Tasmannia, i, 64, 559; ii, 704
  aromatica, ii, 704
  dipetala, ii, 704
  insipida, ii, 704
Taxanthemum attenuatum, i, 94
Taxus, i, 43, 137
Tayloria, ii, 337
Tchilli, i, 158
Teesdalia, ii, 378
  nudicaulis, ii, 378
Teichostemma fruticosum, i, 95
Telanthera, i, 164
Teleozoma, ii, 526, 570
Tellima, ii, 522
Telopia, ii, 38, 166
  speciosissima, ii, 167
  truncata, ii, 167
Templetonia, ii, 439
  retusa, ii, 439
Terebintaceæ, i, 291
Terminalia, i, 20 ?; ii, 534
  cycloptera, i, 94
  volucris, ii, 710
Testudinaria, i, 408
Tetracera, i, 12
Tetradia, ii, 637
  Horsfieldii, ii, 637
Tetrameles, i, 285
Tetraphis, ii, 337
  pellucida, ii, 348
Tetratheca, i, 15, 381
Tetrathecaceæ, i, 15
Thamnea, ii, 322
Thelira, i, 115
Thelotrema lepadinum, i, 69
Thelymitra, ii, 483
  ixioides, ii, 483
Theophrasta, i, 151 *note*
Thermopsis, ii, 421
  lanceolata, ii, 421
Thesium, i, 137
Thlaspi, i, 263, 271; ii, 376
  alliaceum, ii, 377
  alpestre, ii, 377
  arvense, ii, 376
  Bursa-pastoris, ii, 377
  campestre, ii, 382
  ceratocarpon, ii, 377
  montanum, ii, 377
  perfoliatum, ii, 377
  saxatile, ii, 376
Thlaspidium, ii, 379
Thoa, i, 453
Thompsonia, i, 387 *note*
Thonningia sanguinea, i, 414 *note*
Thottea, i, 384
  grandiflora, i, 384 *note*
Thunbergia angulata, i, 94
Thymeleæ, i, 82, 127; ii, 16, 31
Thymus virginicus, ii, 504
Thyrsine, i, 429
Ticorea, i, 16
Tiliaceæ, i, 11, 108, 109; ii, 613, 646
Tillandsia usneoides, i, 413 *note*
Timmia cucullata, i, 235
  megapolitana, i, 235
Tmesipteris, ii, 722
Tobacco, i, 155, 156
Toluifera, i, 127 *note*
Tomex glabra, i, 93
Tonina, i, 53
Toresia, i, 231

Tortula mucronifolia, i, 239
  ruralis, i, 239
Tradescantia, i, 532
  virginica, i, 513, 530 *note*
Tremandra, i, 15; ii, 705
  diffusa, ii, 705
  stelligera, ii, 705
Tremandreæ, i, 15, 63
Trematodon, ii, 348
Tremella cruenta, i, 178
Tribulopis, i, 319
  angustifolia, i, 319
  pentandra, i, 319
  Solandri, i, 319
Tribulus Histrix, i, 318
  occidentalis, i, 318
  terrestris, i, 285
Trichodium, i, 55
  algidum, i, 220
  laxiflorum, ii, 514
Trichomanes, i, 146; ii, 510
  brevisetum, ii, 510
Trichosiphon, ii, 637, 638
Trichosporæ, ii, 585
Trichosporum, ii, 585
Trichostomum, ii, 335, 348
  canescens, i, 69
  capillaceum, i, 238
  lanuginosum, i, 178, 237
Tricoccæ, ii, 615
Tridax, ii, 283
  procumbens, ii, 283
Triosteum, ii, 324, 542
Triphaca africana, ii, 628
Triphelia brunoides, ii, 708
Tripsacum, ii, 574
Triraphis molle, i, 302
  pumilio, i, 302
  pungens, i, 302
Trisetum, i, 230
  airoides, i, 231; ii, 514
  subspicatum, i, 231; ii, 514
Tristania, i, 19; ii, 456
  conferta, ii, 456
  laurina, ii, 456
  nereifolia, ii, 456
Tristemma hirtum, i, 118
  incompletum, i, 116
Triticum, ii, 277
Triumfetta denticulata, ii, 709
  glaucescens, ii, 709
Tropæolum majus, i, 379 *note*, 557
Tromsdorffia, ii, 593, 594, 597
  elongata, ii, 597
  speciosa, ii, 599
Tubercularia vulgaris, i, 70
Turritis, ii, 397
  alpina, ii, 396
  cærulea, ii, 395
  ciliata, ii, 396
  glabra, ii, 398
  hirsuta, ii, 397
  Loeselii, ii, 398
Tussilago corymbosa, i, 211, 253
  frigida, i, 212, 253
  odorata, ii, 270
Tylophora, ii, 210
Typha angustifolia, i, 66, 165

Ulva crispa, i, 178
  Lactuca, i, 70
  plumosa, i, 70
Umbelliferæ, i, 29
Umfar, i, 93
Uncaria elliptica, ii, 533
  ovata, ii, 533
Uniola latifolia, i, 226
Unona Æthiopica, i, 105, 161
  aromatica, i, 105
  hamata, ii, 685
  uncinata, ii, 685
Upas Antiar, i, 79
Urania, i, 157 *note*
Urceola, i, 133
Urena, i, 559
  Americana, i, 109, 165, 171
  glabra, i, 95
  mollis, i, 95
  reticulata, i, 165, 171
Urticea, ii, 534, 537
Urticeæ, i, 79, 137
Usnea, i, 178
  florida, i, 70
  melaxantha, i, 252
  ochroleuca, i, 251
  sphacelata, i, 252
Usteria, i, 37, 132
Utricularia, i, 65
Uvaria, ii, 534, 535
  esculenta, ii, 685
  heteroclita, ii, 685
  odoratissima, ii, 685
  uncata, ii, 685

Vahea, i, 133
Vahlia, ii, 522
Valerianeæ, i, 65
Vallaris, ii, 232, 237
Valisneria spiralis, i, 68

Vanda, ii, 688
  Roxburghii, ii, 689
Vandeæ, ii, 576
Vandellia, i, 164
Vanilla, ii, 497, 551
  aromatica, ii, 498
  planifolia, ii, 498
Vella, ii, 375
  annua, ii, 375
  Pseudo-Cytisus, ii, 376
Velleæ, i, 253
Velleia, i, 33; ii, 266 *note*
Velvet Tamarind, i, 161
Ventenatia, i, 108
Ventilago, i, 26
Verbena officinalis, i, 68
  triphylla, i, 136
Verbenaceæ, i, 38, 40, 135; ii, 659
Verbesina gigantea, ii, 291
Vernoniaceæ, i, 128
Verrucaria nitida, i, 69
Vesicaria, ii, 389
  sinuata, ii, 389
  utriculata, ii, 389
Vestia, ii, 683
Viburnum, ii, 537
Vicia galegifolia, ii, 442
Vigna, i, 325
Vilfa, i, 219, 221
Viminaria, ii, 429
  denudata, ii, 429
Vinca, ii, 247
Vincetoxicum nigrum, i, 529
Viniferæ, i, 151
Viola, i, 122, 532
  tricolor, i, 469 *note*
Violeæ, i, 122
Virgilia, ii, 421
  aurea, ii, 421
  capensis, ii, 422
  intrusa, ii, 422
Viscum, i, 21, 120, 137, 381
  album, i, 460
Visnia, i, 164
Vitellaria paradoxa, i, 296
Vitex, i, 136
Vitis, i, 151, 288, 390
Vitmannia, i, 106
Voacanga, i, 133
Voanda, i, 159
Voandzeia, i, 155
Voandzou, i, 155
Voitia, i, 247
  hyperborea, i, 248, 256
  nivalis, i, 249
Voitia vogesiana, i, 248
Volkameria, ii, 506
  aculeata, ii, 506
  angustifolia, ii, 508
  heterophylla, ii, 508
  japonica, ii, 507
  Kæmpferi, ii, 507
  Kæmpferiana, ii, 507
  ligustrina, ii, 508
  tomentosa, ii, 508
  inermis, ii, 508

Waltheria americana, i, 165, 171
  indica, i, 165, 161
Wanzey, i, 94
Wedelia, ii, 285, 297 *note*
Weigelia, ii, 541
Weinmannia, i, 20
Weissia, ii, 348, 349
  affinis, ii, 344
  controversa, i, 69
  nuda, ii, 348
  radians, ii, 344
  splachnoides, i, 241; ii, 347
  Templetoni, ii, 343, 344
  trichodes, ii, 344
Westringia, i, 39, 380
Whitia, ii, 596, 610
Wintera, i, 64; ii, 704
Winteraneæ, i, 413 *note*
Wintereæ, ii, 704
Winter's bark, ii, 724
Woodsia, ii, 253, 543, 546
  glabella, ii, 518
  hyperborea, ii, 253
  ilvensis, ii, 253, 518
  mexicana, ii, 546
Wormia, i, 12
  alata, ii, 704
Wrightia, ii, 233, 242, 243
  antidysenterica, ii, 244
  pubescens, ii, 244
  tinctoria, ii, 244
  Zeylanica, ii, 244
Wulfenia intermedia, ii, 577
  Notoniana, ii, 607
  obliqua, ii, 577

Xanthium, i, 31
Xanthorrhœa, i, 50, 308, 435
  arborea, ii, 724
Xeropetalum, ii, 673
Xerotes, i, 52, 436
Ximenia, i, 155
  americana, i, 551

Xylomelum, ii, 15, 18, 21, 38 ; ii, 159
    pyriforme, ii, 159
Xylophylla, i, 43
    longifolia, i, 43
Xylosteum, ii, 541
Xyris, i, 53
Xysmalobium, ii, 217
    grandiflorum, ii, 217
    undulatum, ii, 517

Yam, i, 154, 160

Zaffo, i, 160 *note*
Zamia, i, 458, 506 *note;* ii, 717
    spiralis, i, 308, 310
Zanthoxylon, i, 16
Zapania, i, 136
    nodiflora, i, 66, 68
Zea, i, 506 *note*
    Mays, i, 154, 469 *note*
Zieria, 17
    canescens, ii, 709
    furfuracea, ii, 709
    involucrata, ii, 709
    lanceolata, ii, 669
    Smithii, ii, 669
Zizania aquatica, i, 469 *note*
Ziziphus, i, 26
Zostera marina, i, 68
Zygodon, ii, 344
Zygophylleæ, i, 144, 285
Zygophyllum album, i, 285
    coccineum, i, 287
    Fabago, i, 287
    lanatum, i, 286
    simplex, i, 285

PRINTED BY J. E. ADLARD, BARTHOLOMEW CLOSE.